THE CHICAGO
MEDICAL JOURNAL AND EXAMINER

VOL. LIV. FEBRUARY, 1887. No. 2.

ORIGINAL COMMUNICATIONS.

METRITIS.

By EDWARD B. WESTON, M.D.

[Candidate's Thesis, Read before the Chicago Gynæcological Society, December 17th, 1886.]

In studying the history and literature of any medical subject we are forcibly reminded of the statement made by Aristotle two thousand years ago, that "probably all art and all wisdom have often been already fully explored and again quite forgotten."

In selecting "Metritis" for my thesis, it is not for the purpose of bringing to your attention "something fully explored and quite forgotten," or something new, but to ask your indulgence while the subject is briefly reviewed.

It is a subject as old as medicine, and often learnedly treated; yet concerning which there is still far from unanimity of opinion.

Whether metritis is the best name for the disease depends upon its pathology, which we do not attempt to indicate by its use. We use it for convenience. Many gynæcologists have attempted to formulate their opinion of its pathology by the

use of a distinguishing name; but as yet none has been proposed which is satisfactory to all.

Metritis—literally an inflammation of the womb—would, if strictly considered, denote an inflammation of all parts of the organ, peritoneal, muscular and mucous.

If it were so used it would come nearer to indicating its pathology. But the term as employed indicates a pathological condition—acute or chronic—of the parenchyma of the uterus. Some have considered a cervical and corporeal metritis; but, as the cases in which one part alone is involved are very rare, we shall ignore this subdivision, without denying that one part may be affected without the other, and stating that the neck or body is primarily and chiefly involved, as the r

Acute Metritis—puerperal and non-puerperal. That uncomplicated acute non-puerperal metritis is a rare disease, all admit. Thomas, in an early edition of his "Diseases of Women," says he had observed it but twice. Others of broad observation have never seen a case. Emmet says: "There is no proof that the uterine tissue adjacent to the lining membrane is ever involved, except in the puerperal state." Goodell writes: "As acute metritis, apart from child-birth, rarely exists, excepting as an advanced state of acute endometritis, I shall make no further allusion to it than the present one." Byford does not consider it so rare as most authors do; and a great majority of the profession believe that the disease is occasionally met with.

When the parenchyma has become inflamed the mucous membrane rarely altogether escapes. Indeed, when we consider the causes of the disease this could hardly be possible, and in cases where there is no doubt as to the propriety of designating them metritis, there was probably first a mild endometritis. When the disease arises from an operation on, or

injury to, some neighboring part, as the vagina or bladder, we can conceive of its being pure and uncomplicated, the *cause* being conveyed by blood or lymph vessels directly to the part, and that if the disease is mild and of short duration other structures may escape. But if the disease has arisen from an intra-uterine or vaginal pessary, the use of the sound or any operation on the organ itself, the disease probably starts in the mucous membrane, and the metritis, though greatly overshadowing the endometritis, is a secondary disease. At any rate a wound has been made in the mucous membrane through which the *cause* has at least passed. Indeed, it is now denied that a true inflammation of the connective tissue of the uterus is possible, except where a wound exists, and also a septic material, to gain entrance through the wound. An operation may be performed and primary union occur without metritis developing; and, again, the septic material may be present and an intact membrane bar its entrance. If the wound and poison both exist, a metritis will be developed, and the disease probably progress until neighboring structures are involved and the case ceases to be a simple uncomplicated one. Sudden suppression of the menses, intemperate coitus, tumors in or near the uterus are also among the causes.

After child-birth the uterus becomes inflamed much more frequently. If the accoucheur has been too meddlesome, made too frequent and rough examinations, used instruments unskillfully, removed the placenta violently or but partially, the vagina cervix internal surface of the uterus may have been seriously wounded, and the channel formed through which the readily decomposing discharges may gain entrance to the organ. If proper antiseptic precautions were not observed both during labour and after delivery we shall probably have metritis.

In acute non-puerperal metritis the uteris is enlarged, chiefly antero-posteriorly; it may be even to its size in the second or third month in pregnancy. "On section the muscular wall is thickened, but soft and pulpy, and yields on compression a yellowish-red exudation. The mucous membrane is thickened and vascular, but the cavity of the uterus is not altered in size. Microscopically the muscular bundles are infiltrated with pus corpuscles." (Hart and Barbour).

The symptoms are not pathognomonic. There is fever, usually proportionate to the amount of local disease, and in most cases there are chills at the beginning. Severe pain is experienced which often extends down the thighs, and to the bladder and rectum, the evacuation of which greatly increases the suffering. There may be diarrhœa, nausea and vomiting. On examination, we find tenderness over the hypogastric region. On introducing the finger into the vagina it will be found at first hot and dry, the uterus usually low, swollen, very sensitive, but movable unless old adhesions exist. Rectal and bi-manual examination, if it can be borne, will aid us in our diagnosis. After the disease has lasted a few days the fever and pain gradually decrease, and a leucorrhœal discharge shows that there is a complicating endometritis.

Few would feel themselves competent to say that they had before them a pure case of metritis, without the slightest complication. However, if the uterus is movable, and no peri-uterine deposit be found, and if the pain and tenderness do not seem to extend from the uterus, we may conclude that it is chiefly affected. The disease may terminate in resolution, or in the formation of an abscess, which may burst into the uterus itself, the bladder, the vagina, the intestines or even through the abdominal walls. But the most common

termination is in chronic metritis. Some, however deny that it ever so ends.

The prognosis must be guarded, as the outcome will depend on which course the disease pursues.

Treatment.—We must obtain for the patient as far as possible, perfect rest. Pain must be relieved, and in most cases it will be necessary to at once administer opium in some form. Milder remedies usually fail and need not be experimented with. Morphine, hypodermically, is usually best, as medicine taken into the stomach is very apt to nauseate, and anodyne rectal injections for a time increase the pain by their pressure, even though it be slight. A rectal suppository is preferable to an injection. It is well if the rectum can be kept empty. Some advise cathartics: others, enemata. The pain caused by the pressure of the latter on the uterus leads me to prefer a suitable cathartic. Vaginal injections of warm water, containing opium, given from a fountain syringe, gently and with little force, may be used daily or oftener. The openings in the syringe-pipe should all open or point backward. The patient being on her back the water will sufficiently distend the vagina and come in contact with every part of it, and the danger of forcing water into the uterus unintentionally be reduced to the minimum. It is often advised to use a pipe without a terminal orifice. But there is more danger from the lateral openings, if the uterus is in its normal position, or anteverted or strongly retroverted. Poultices of flaxseed meal, made much lighter than they usually are, and covered with oiled silk, can be borne in most cases.

If they cannot, two thicknesses of flannel, wrung out of hot water, and covered with waterproof material, may be used. If the case is severe, blood may be drawn, by scarifying the

uterus, or by leeches applied to the perineum or abdomen. This should not be overdone, for in nothing is it more important to observe the golden mean. Ice cold applications to the abdomen have been recommended. In a case caused by a portion of retained placenta, or where it is feared the uterus may contain septic matter, it must be at once rendered aseptic by injections of carbolic acid or other proper agent. Little need be said as to the purely medicinal treatment. When there is much fever, aconite, quinine, antipyrine may be given. In cases occurring in feeble women, especially after childbirth, alcoholic stimulants may need to be used.

Chronic Metritis.—Fritsch says that "all conditions and circumstances leading to repeated hyperæmia of the non-gravid uterus, or preventing the normal puerperal involution of the organ, are of etiological importance in chronic metritis." Goodell says, "By chronic metritis is meant such tissue changes in the substance or parenchyma of the womb as are brought about by a previous inflammation, or from persistent hyperæmia." Thomas speaks of the condition as an inflammation. Hart and Barbour state that, "From a pathological point of view the term metritis is incorrect, because there never has been demonstrated a chronic inflammation of the muscular fiber of the uterus." Emmet writes that, "We look in vain after death for any evidence of metritis or endometritis, or for ulceration of the cervix as it is termed, for neither of the conditions so-called is inflammatory." "When doctors disagree, who shall decide?" Doctors, evidently; but not we.

Included in the term chronic metritis are numerous pathological conditions. If we could approach the subject de novo, and have the pathological anatomy demonstrated, we could soon agree upon a name expressive of its pathology, and

upon the proper treatment of the disease. But we do not know its pathology, absolutely. Nor have we a single disease, or a single organ, involved. For while in that condition which we call metritis the parenchyma is most markedly at fault, we always have pathological states in contiguous tissues and organs. Fritsch says, "The only facts positively demonstrated are the enlargement of the uterus, the dilatation of the vessels, particularly the larger, and the frequently complicating peri, and endo-metritis."

If we examine a case in its early stage we find the uterus reddened, soft, sensitive and infiltrated with blood, serum and fibrin, and consequently enlarged; and at times altered in shape. Later on the organ increases still further in size from a proliferation of connective tissue. As the growth continues the blood vessels are obliterated or lessened in size, by the pressure, and the blood supply is diminished. The organ then becomes anæmic, indurated, and diminishes in size; but rarely if ever reaches normal dimensions.

The most common cause of chronic metritis is delayed involution of the puerperal uterus. The change of muscular tissue into adipose, and the absorption of the latter, does not proceed as rapidly as it should.

The organ is hyperæmic, leading to connective-tissue growth, which remains; while the muscular tissue but slowly reaches its normal amount. The circulation being interfered with, the organ, from having been too well nourished, becomes starved. Abortions are oftener followed by metritis than are labours at term, for now less prudence is observed, and the uterus is not stimulated to contraction by the nursing of the child. A piece of retained placenta, a blood-clot,

a peri-uterine inflammation may be an irritation which causes an hyperæmia and a following metritis.

In the present condition of the uterus pregnancy may readily take place, to be again followed by abortion or miscarriage, and their attendant evils. A lacerated cervix is a frequent source of metritis. Here we cannot resist using Emmet's language: "Laceration of the cervix becomes a most frequent cause of uterine disease, arresting involution through the irritation established by the separation of the flaps. Hypertrophy of the uterus is thus kept up by this source of irritation, and an intractable form of erosion appears, with an increased menstrual flow, and an exhausting leucorrhœa in the intervals. We find prolapse of the vaginal wall taking place when the proper support is wanting at the outlet; the uterus then becomes retroverted, and, in consequence of the obstruction to the circulation from its mal-position, it increases still more in size." Again he says, "I would state that, for many years past, I have met with few or no cases of sub-involution which were not due to laceration of the cervix."

If the patient get up too soon after confinement, and what is "too soon" for one may not be for another, the yet large uterus assumes a malposition, interferes with the circulation, and a formative congestion results. Imprudences at the menstrual period, which increase or prolong the normal congestion, displacements, tumors, excessive sexual excitement, diseases of the liver or heart, or anything which interferes with the pelvic circulation, or determines too great a uterine blood-supply, may be causes of metritis.

The disease is usually insidious in its development, and the patient can hardly tell when she first considered herself sick.

She has, perhaps, never felt well since some confinement. Her back is weak or aching. Pain extends down the lower limbs, and they seem to have lost much of their strength. There is a sense of pressure and weight in the pelvis, and she thinks she has "falling of the womb." And she is right. Her general health fails, a uterine headache distresses her, her appetite is variable, her bowels usually constipated, her circulation bad. At first she may repeatedly become pregnant, and abort, and later become sterile. An endometritis gives her a leucorrhœa, the character of which varies with the severity of the disease, and whether the neck or body is chiefly involved.

Physical examination of a patient with metritis involving the whole organ, which is unchanged by flexions or misplacements of any kind, shows the uterus uniformly enlarged, but of quite normal shape, but differing from an enlargement due to pregnancy, inasmuch as the latter has an antero-posterior thickening, which one, with an uneducated finger, or, on careless examination, is apt to diagnose anteflexion. As we are apt to have flexion, version and prolapse in varying degrees, neighboring inflammatory deposits and tumors, the uterus will be found in all shapes, and an accurate diagnosis is often made with difficulty. The differential diagnosis we pass, having incidentally referred to the conditions with which metritis is most likely to be confounded.

The prognosis is unfavorable, that is, we are rarely able to restore the organ to its normal condition. If the case is seen early, if there are no serious complications, and if the patient be an obedient one, the result of treatment may be so favorable as to be considered a cure. But usually, when the patient comes to us, the concurrent troubles are so serious, the structural alterations so great, that we can only hope to relieve. Yet, even then, it is in many cases possible to so relieve that

the patient considers herself well. Many cases resist all treatment. Again the patient disobeys the most judicious advice, and relapses and exacerbations occur, which are discouraging to all. The great length of time required to effect a cure, or even an amelioration, taxes the patient's confidence as to the final outcome to the utmost, and very often she drops out of sight, to live on a nervous, irritable invalid, shattered in body and possibly in mind, whose only hope is to be relieved by nature, when the menopause is reached, and the uterus undergoes senile atrophy.

Hart and Barbour, in their "Manual of Gynæcology," say that "chronic metritis is the most important of all the diseases of women." Thomas says, in his treatment of inflammation of the neck of the uterus, that it "may be regarded as the most important subject in a work on diseases of women." Of course, it is not to be inferred that a metritic womb is more important or serious than a carcinomatous one, or than an ovarian tumor, but that the sum total of evil resulting from the former is greater than from any other one of the diseases of women. Hence the great importance of the treatment of these cases. As already seen, they are seldom uncomplicated.

So we have more than one diseased structure to consider in applying our remedial measures, and the treatment of each case must vary as its pathology varies. Concerning the general treatment there is but little difference of opinion: regarding the local there is the greatest variance. Some, notably among them Dr. Emmet, would trust very largely to general treatment. He would watch the pelvic circulation, correct malpositions of the organ, and look after general nutrition; all of which is certainly of the utmost importance.

Emmet writes: "As long as we continue to treat the recognized pathological changes in the uterus as the primary condition, it will seem proper to apply agents directly, or as nearly so as possible, to the parts involved. If, however, we appreciate the fact that some inflammatory change in the pelvic tissues, outside the uterus, is existing, or has existed, in almost every instance of so-called uterine disease in the non-puerperal state, we shall not attempt to treat the effect by agents introduced into the cavity of the uterus, without being prepared for recurrent attacks of cellulitis, excited by our mode of practice, and not due to some accidental cause."

Again: "Inflammation of the lining membrane of the uterine canal does exist under exceptional circumstances as a distinct condition, but it is rare. In practice, it is believed, we chiefly find the congestion and supersecretion as an effect, of little consequence in itself until it has been aggravated by misapplied local treatment." He also says: "When an erosion has been healed by caustic applications, the health of the woman improves rapidly, since, for a time, a great leak has been stopped, by which she was constantly pouring out her life-blood in the form of leucorrhœal discharge. But, as the primary cause is not removed, the erosion must return again and again, until at length, if the treatment is continued, every mucous follicle will have been destroyed, and no further discharge can take place; but the hypertrophy of the uterus and the abnormal condition of the pelvic circulation will remain. If the application is strong enough to produce a slough, then, of course, the mucous follicles will be destroyed; but even if milder means, as the use of the nitrate of silver, are persevered in long enough to heal the surface, the damage will be quite as great, since the tissues will have

been rendered sufficiently dense to cause atrophy of these follicles, and, after either mode of treatment, the tissues become essentially cicatricial in character." "Yet conscientious men of our day, after the use of the cautery or caustics, will leave a surface on the vagina or cervix to heal by granulation, and will deny that the surface thus formed is cicatricial or that it ever contracts; and I have no reason to doubt that they think so, but I do impugn the accuracy of their observation, and the wisdom of their measures."

On the other hand, the great body of gynæcologists believe in the importance of local treatment, of course, according to Emmet, because they know no better. Goodell well represents this class. He writes that "while constitutional remedies are not neglected, the chief treatment should be a local one." In speaking of caustic applications, he says of nitric acid, "I am very partial to this escharotic, nor have I found that its use is followed by symptoms more urgent than those produced by the milder caustics. It has been urged that nitric acid will so far modify or injure the endometrium as to prevent conception. To this I can reply that I have twice by its use cured sterility, and that I have repeatedly seen pregnancy occur in women treated with it." Even if, after the use of so powerful an agent as nitric acid, or the repeated use of the less potent silver nitrate, the mucous membrane does become, or is changed into, cicatricial tissue, if the diseased condition for which it is used is essentially cured, and the membrane is in so normal a condition as to be compatible with pregnancy, the probability is that the profession will continue to follow these barbaric methods. And even if, instead of sometimes curing sterility they so affected the parts that they always caused it, they would continue to be used, if they transformed the patient from a sufferer and a cripple to a comparatively well woman.

And it is even possible that it would be a better way of causing sterility than by removing the ovaries, which it has been proposed to do for the disease under consideration.

As to the greater importance of general or local treatment, no conclusion can be reached. Each is supplemental to the other. It is evident that the general treatment is more often neglected. It is also true that in young and unmarried patients it should be first faithfully tried.

We find we have two classes of patients to deal with; to one of which we have to apply the curb, and to the other the spurs. In one class we find those naturally ambitious and reluctant to acknowledge they are half as ill as they are; and also those whose lots have fallen in harder places, and who are compelled to work, sick or well, as long as they can stand. In the other class we have those who naturally have less energy, and who readily yield when the struggle comes. Here we find many of the wealthy, and those of whom it is often uncharitably said, "they love to be sick." The advice, and much of the general treatment, which would be proper for one class would be ruinous to the other.

All measures calculated to improve the whole system should be adopted, as tending to improve the uterus as a part of the whole. A change of residence for a time, giving a change of scene and air, and a rest to mind and body, is of the greatest value. The diet, bathing and clothing must receive our attention, and the intestines be thoroughly unloaded and kept in a soluble condition. Exercise and rest must be judiciously combined. Suitable tonics, foremost among them iron, will be needed, and ergot will often help us wonderfully. Alterative medicines sometimes seem of value. All measures and medicines tending to regulate the pelvic and general circulation must be carefully attended to.

In our local treatment we must constantly keep in mind the various and varying conditions our patients present, and as one or the other predominates, and we change our treatment accordingly, so will our success be.

We suppose we have a patient with a chronic metritis involving the whole organ, and accompanied as usual by an endometritis.

We shall probably begin our local treatment by ordering a hot water vaginal douch, taken once or twice a day. One or two gallons of water to be taken from a fountain syringe, and from twenty to thirty minutes to be consumed in taking it. In ordering these injections it must not be assumed that the patient knows anything about them, but minute directions for their use must be given. About once in three days, we shall make an application to the entire uterine cavity, of iodized chloral-phenol, or other mild caustic or astringent. If the uterine canal is not sufficiently open to permit us to readily make the application, it must be dilated, preferably with a uterine dilator. A glycerine tampon may now be introduced into the vagina and allowed to remain from twelve to twenty-four hours. If thought best it may be medicated, but its chief use is of course to deplete. It may be made of absorbent cotton, oakum or antiseptic wool. If there is a misplacement of the uterus an attempt may be made to use the tampon for a pessary. If this cannot be done the uterus must be kept in place by a proper pessary, if such can be tolerated. If there are peri-uterine inflammations, thickenings or adhesions, the vagina and abdomen may be painted with iodine.

Although pregnancy so frequently results in abortion, sometimes it is a means of an essential cure. If the patient,

ANEURISM, COMPILED FOR THE ROCK RIVER M

ALL DOUBTFUL CAS

So far as possible each Reporter is credited with his own series. TH

NAME OF VESSEL. / REPORTER	Aorta.	Abdominal Aorta.	Thoracic Aorta.	Aorta-Intra-pericardium.	Ascending Aorta.	Ascending and Transverse.	Transverse ad Part of Arch.	Transverse and Descending Arch.	Descending Arch.	Thoracic Aorta Below Arch.	Totals of Aorta.	Totals of Abdominal Aorta.	Totals of Thoracic Aorta	Anterior Palatine.	Axillary.	Brachial.	Carotid.	Internal Carotid.	Cerebral.	Middle Cerebral.
Barwell	....	....	....	....	....	....	....	....	....	....	....	....	....	....	11	....	....	....	....	
Ciniselli	37	....	....	....	....	....	....	....	....	....	37	....	....	....	....	....	....	....	....	
Crisp	....	59	8	....	98	....	48	....	....	21	....	59	175	....	18	1	25	....	1	
Ehrmann	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	213	....	....	
Fischer	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
Goodhart	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3
Hayden	92	....	....	....	....	....	....	....	....	....	92	....	....	....	....	....	....	....	....	
Hodgson	....	8	21	....	....	....	....	....	....	....	....	8	21	....	....	....	2	....	....	
Holmes	....	2	....	....	....	....	....	....	....	....	....	2	....	....	5	....	....	....	....	
Kinlock	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
Koch	....	....	....	....	....	....	....	....	....	....	....	....	....	....	79	....	....	....	....	
Lebert	....	[5]103	....	....	....	....	....	....	....	....	....	103	....	....	....	....	....	....	....	
Le Fort	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	241	....	....	
Lisfranc	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
Meyers	....	....	31	....	....	75	....	....	....	....	....	....	109	....	....	....	....	....	....	
Norris	....	....	....	....	....	....	....	....	....	....	....	....	....	....	60	....	138	....	....	
Pilz	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	182	....	....	
Poore	....	....	8	....	....	....	....	....	....	....	....	....	8	....	....	....	....	....	....	
Roux	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
Poland	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
Sibson	....	[6]177	....	87	193	140	120	20	72	71	....	177	793	....	....	....	....	....	....	
Syme	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
Wyeth	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	789	....	....	
Wenzel[7]	....	7	4	....	2	1	1	....	....	....	....	7	8	1	1	....	....	2	1	

1. Including Wounds.
2. Femoral, Popliteal and Brachial; group could not be satisfactorily separated.
3. Also, involving Carotid and Subclavian Artery.
4. Also, involving Axillary Artery.
5. Three, near Bifurcation of Arota.
6. 131, near Cœliac Axis.

MEDICAL SOCIETY FROM VARIOUS SOURCES.

CASES OMITTED.

The cases added by myself have never before been tabulated.

Middle Cerebral.	Posterior Cerebral	Cranial.	Femoral.	Gluteal.	Gluteal and Sciatic.	Hepatic.	Common Iliac.	External Iliac.	Inguinal.	Innominate.	Ophthalmic.	Popliteal.	Pulmonary.	Radial.	Splenic.	Subclavian.	Subscapular	Anterior Tibial.	Posterior Tibial.	Ulnar.	Vertebral.	Not Named.	
			141		7			43		25		148				9		1		1	[1]22		408
			[2]26					2		[3]13												8	86
		66	1	2			2	9		20	1	137	2			23	1		2				551
																							213
					33							89											122
3	1																						4
																							[4]92
			15						12							[4]5							63
																							7
																			22				22
																							79
																							103
																							241
			25									59										95	179
																							109
																							198
																							482
			1							1						1				1			12
												27										5	32
													22										22
																							880
												18											18
																							789
1						11		1				[5]2		1	1	1							37

7. These cases, including my own of dissecting aneurism, have been reported in the Medical Literature from January to October 14, 1886; they are not tabulated elsewhere; reported by Caton, Hall, Morris, Styan, Shattuck, A. A. Smith, Berènyi, Black, Sennand, Benham, J. A. Kelly, Prewitt, Cayley, Barwell, Hobson, Walker and others.

8. One of these two cases, a man sixty-three years old, a hard drinker, was to be operated on (1874), but he tried to get out of his bed contrary to orders, the aneurism burst, gangrene rapidly set in and the leg was amputated in middle of thigh, with fatal hemorrhage two days later. The case was never reported.

H. P. WENZEL, M.D.

by the greatest care and prudence, escapes the abortion, and after confinement strictly obeys her physician, she may find herself with a degree of health unknown to her for a long time.

3225 Vernon avenue.

THORACIC ANEURISM, WITH A CASE OF DISSECTING ANEURISM OF THE INFERIOR SURFACE OF THE AORTIC ARCH.

By H. P. WENZEL, M.D., *Ex-President of the Rock River Medical Society.*

[Read before the Rock River Medical Society on November 9th, 1886. Published by request of the Society.]

It is said we learn more by "mistakes and failures than by success;" therefore I present for your consideration Thoracic Aneurism, with a case under my care which proves that there is "no absolute sign in aortic aneurism." My diagnosis was not verified on autopsy. The specimen could not be obtained.

On July 26th, 1886, L. Y., an actress, a native of Virginia, consulted me. She has been on the stage sixteen years, married sixteen years, is 32 years old, 5 feet high, and weighs 135 pounds. She was never pregnant, and her only sickness was a bad cold ten years ago. She suffers from obstinate constipation, palpitation, sometimes a severe pain under the left breast, which frequently shifts to the right temple. Her sleep is broken, and she is restless; tires easily, and on exertion gets "winded." Her appetite is good; her menses are regular, and her urine normal. She sweats easily.

Status præsens: She is well developed, has gray eyes, dark hair. She denies being intemperate. Her tempera-

ture is normal; her pulse is 80 and regular; her respiration is 18, excepting a few bronchial râles at base of the lungs; physical examination is negative. Prescribed: ℞ cascara cordial ℥iiiss, spts. æth. co. ℥ss, liq. strych. br. ℥ss. M. Sig. Tablespoonful, t. i. d.

July 27th. Temperature normal; pulse 84. There were several copious movements of her bowels, the pain markedly less; did not sleep during the night and feels nervous. She complains of a "lump" in her throat and fears sudden death. To take ℞ elix. valerian ammon. ℥ss, syr. brom. co. ℥ij, elix. calisaya c. ferriet strych. ℥iss. M. Sig. Teaspoonful every two or three hours during the day, and bromidia q. s. to produce sleep at night.

July 28th. Temperature normal; pulse 74, full and regular; respiration 18. She slept all night after taking a teaspoonful of bromidia. She feels much better; the pain is gone, and the "lump" don't trouble her much, but she has anorexia. Continue the mixture of the bromides and take a teaspoonful four times daily of ℞ tr. cinchonæ ℥iiss, elix. calisaya co. ℥iss. M.

July 30th. Pulse 74; respiration 18. She has some appetite, and no pain. The "lump" has not returned, and she feels well; her bowels are regular. The report is similar for the two following days.

August 2d. There is a severe burning pain under the left breast, pain in bowels and diarrhœa, profuse sweating. Her temperature is 99.5° F., pulse 96, feeble, and respiration 24. Ordered: ℞ spts. chloroformi ℥ss, tr. capsici ℥i, syr. zingiber. ℥ij. M. Sig. Teaspoonful hourly until relieved, and then a teaspoonful four times daily of ℞ syr. brom. co. ℥i elix. calisaya c. ferri et strych. ℥iij. M.

August 3d. Diarrhœa is checked, and there is no pain. She returned from a visit in the latter part of August and reported having had a good appetite, sleeping well, and having no pain anywhere. She was able to run up or down stairs without fatigue or shortness of breath, and the "lump" came only a few times.

September 1st. At 7 P.M. I was again called to see her. Her temperature was 99.5° F., pulse 84, respiration 22; had "some chills" and a "queer feeling" at the heart, and "an indescribable feeling along the wind-pipe;" there is an irritable cough. Physical examination negative, except a few posterior bronchial râles. Take ℞ quin. sulphate ʒij, morph. sulph. gr. ij, fl. ext. licorice ʒiv. M. Sig. Teaspoonful every two or three hours.

September 6th, 9 P.M. Have not seen patient since last date. She said she felt "good after taking the last medicine, but the cough did not stop." Temperature 98.8° F., pulse 82, respiration 24; physical examination revealed only a few broncial râles at base of lung. There is some dysphagia and anxiety. Placing her hand under the left breast she said, "I can't get my breath when the pain comes here; this will kill me." Firm pressure relieved the pain. Take ℞ fl. ext. grindelia rob. ʒiss, tr. opii camph. ℥ss, cascara cordial ʒiss. M. S. Dessertspoonful every two hours during the night.

September 7th, 10 A. M. Temperature 98°F.; pulse 78, regular; respiration 22 and easy; profuse perspiration; bowels moved twice; the "lump" is troublesome again, and a choking sensation is complained of. The cough is rasping, spasmodic, and at intervals very annoying; but aside from posterior bronchial râles there are no abnormal sounds dis-

coverable anywhere. Consultation was requested, and family declined it.

September 8th, 9:15 A.M. Her husband called at my office, saying his wife had an "awful pain" under the left breast, and had a "regular ague chill;" breathing as usual, no cough, and sweating. Wrote ℞ quin. sulphat. 3i, pulv. opii gr. x, calomel gr.v. M. Ft. cht. No. x. Sig. One every two hours in water. One hour later I found her sitting in bed vomiting, probably from taking a powder in a *dry* wafer. I gave a powder five minutes later in a *wet* wafer, which was retained, and at 10.50 she was easy. Temperature 97.5°F; pulse 84, regular, but weaker than usual; respiration 22; no cough. She now described the pain as "if some one bored a hot iron into my breast under the heart."

At 2:30 P.M. I was hurriedly called, and found her eyes fixed, pupils slightly, but equally, dilated; she was gasping; her pulse 80 and thready. The surface of her body was very pale and clammy, her extremities icy cold. Whisky hypodermically, friction, etc., failed, the pulse disappeared, a gasp, followed by a long-drawn sigh, a slight tremor, and the curtain dropped on her last act at 2:40 P.M.

I certified *fatty heart* as the cause of death. But owing to subsequent rumors of foul play on the part of the husband, I requested a post mortem examination to settle the question. Sixty hours after death the autopsy was made by Drs. Scribner and Eidemiller, under supervision of the coroner and in presence of myself, Dr. Martin, health-commissioner, Dr. Miller, a representative of the family, a detective and the undertaker.

The body well preserved; adipose tissue under skin nearly an inch thick; no marks.

Thorax opened in the usual way. Right pleural cavity filled with liquid blood, and two blood-clots each the size of a goose egg lay at the base of the right lung near the spinal column. Left pleural cavity contained a very small quantity of serum.

The great vessels of the neck and œsophagus were tied and cut off and a double ligature was placed around the gullet and aorta just above the diaphragm and the tubes severed between the ligatures to facilitate removal *en masse* of the thoracic organs, which was done under difficulties owing to numerous strong old adhesions of the lower lobe of the left lung to the costal pleura and diaphragm. The right lower lobe was also bound down by adhesions but less firmly than the left. Both lungs were exsanguinated, very pale, and the lower lobes presented old inflammatory changes—the left the most.

The pericardium contained a very small quantity of serum —no adhesions.

The heart was imbedded in adipose tissue, small, flabby, and valves normal.

Ascending aorta normal; on the inferior (concave) surface of the middle of the arch was a sausage-shaped swelling, an inch and a half thick, extending downward nearly to the diaphragm, the œsophagus lying in front, the thoracic aorta behind. The gullet was adherent to the tumor and the lower half deeply imbedded in the sac. At the upper right lateral surface of the tumor, just beneath the descending portion of the arch, was an opening into the sac large enough to admit a finger, while the intima was perforated in the middle of the (concave) arch. At the point of rupture the sac wall was very thin and friable; the sac contained fibrin, thrombotic

detritus, and a recent clot in its lower portion. The adventitia formed the outer wall of the sac; the media was partly destroyed; there was no further lesion in the intima. Other portions of the aorta were normal; the innominate, carotid and subclavian arteries were free from disease.

Stomach normal, empty; spleen normal; liver normal, gall-bladder full of bile. No other organs examined.

Cause of death: Rupture of dissecting aneurism of the arch of the aorta.

Remarks.—Autopsical evidence explains few of the symptoms. Classical symptoms of aneurism—pulsating tumor, bruit or murmurs, eye and voice symptoms, unequal pulse—were absent; dysphagia was a very late symptom, dyspnœa was not marked; palpitation was complained of in July but did not recur. The pain under the left breast was absent more than present and shifted to the right temple; the "lump" and nervousness yielded to tonics and nervines, and did not return for weeks. The dry, harrassing cough was doubtless a reflex act and the globus had a similar origin. The bronchial râles were either caused by reflex irritation or pressure, or both combined. The general picture of the patient during the week preceding death resembled that of malarial intoxication. There were all the signs of neuralgia or hysteria, none of aneurism.

While death was inevitable, vomiting hastened the bursting of the sac at the weakest point by sudden compression and forcible, wavelike, upward propulsion of the sac contents and the finale was—dramatic.

The age of the tumor cannot be accurately given; that it was recent is possible. Theatrical people have a hard,

arduous, restless, emotional life with much exposure, and are not free from intemperance.

That the intimate adhesion of the aneurism to the œsophagus caused so little dysphagia is remarkable; and in the absence of a history of illness or injury the lesions of the lungs and pleural adhesions are unexplained.

As the great vessels were not affected or implicated by the perforation in the intima, and as there was no obstruction to the blood current, the regularity of the pulse was not interfered with.

With your permission I now present a condensed description of aneurisms of the aorta within the chest and their treatment. I also present for your inspection the tables arranged for comparison—a brief bibliography is appended, voluminous references are out of place in an essay of this kind.

Introductory.—"Aneurism of the aorta develops, particularly in those localities against which the blood-current impinges with special force," says Eichhorst; but dissecting aneurism is an exception to this general rule, and is found only on or in connection with some portion of the aorta, being most common in the thorax. Aortic aneurisms occur in their relative frequency as follows: ascending aorta, arch; descending thoracic aorta, abdominal aorta.*

If a certain area of the aortic wall is weakened a cul-de-sac gradually buds out, enlarges, and the result is a *sacculated aneurism*, on which a second sacculation may develop. If the entire aorta is dilated from any cause for a certain distance a *fusiform* aneurism results, and if a portion of the intima be weakened from any cause resulting in a solution

* Shrady estimates that one death in every 800 is from aneurism. Editorial in the *Medical Record*, July, 1886.

of continuity, through which the blood insinuates itself between the arterial tunics, a sac is formed which may reach to the diaphragm—in one case it reached to the bifurcation of the abdominal aorta. If a local degenerative process of the media causes the intima to yield secondarily the result is a *dissecting aneurism.* If the intima is again perforated at the lower end of the sac and the blood-current re-enters the aortic tube and produces the appearance of a double aorta, the sac wall may be thickened by laminated fibrin within or by adhesive inflammation to adjacent structures without.

The *size* of an aneurismal tumor varies. I have observed numerous aneurisms in the brain smaller than a millet seed. In the larger arteries they vary from the size of a pea to that of an adult head. Baumberger's case of aneurism of the aortic arch projected upward so far that the patient's chin rested on the tumor.

Aneurisms frequently destroy the sternum, ribs or spinal column by erosion, or the inflammatory action resulting from continuous pressure may produce adhesion to neighboring structures, and pressure upon the nerves may cause pain, dyspnœa, etc., and compression of the œsophagus may cause dysphagia.

Frequency.—Lebert and Meyer claim that aneurism most frequently involves the arch, but authorities generally give the first place to the ascending aorta, and statistics bear them out. Of Crisp's 551 cases of aneurism, 175, or 31 per centum involved the thoracic aorta, and of 167 of these, 98 involved the ascending aorta, 48 the arch and 21 the descending aorta. Hodgson's collection of 63 cases contains 21, or 33 per centum of thoracic aneurism. In Sibson's collection of 880 cases, 460, or 52.3 per centum involved either the ascending aorta or arch. Of his 703 cases of aneurism of thoracic oarta

87, or 12.37 per centum were within the pericardium; 193, or 27.45 per centum involved the ascending aorta; 140, or 19.91 per centum involved the ascending aorta and arch; 120, or 17.079 per centum, the transverse aorta; 20, or 2.84 per centum, the transverse and descending arch; 72, or 10.24 per centum, the descending arch, and 71, or 10.09 per centum, the aorta below the arch. Hence, 622, or 88.47 per centum of these 703 cases of aneurism affected the ascending aorta and the arch; 420, or 59.7 per centum affected some portion of the ascending aorta, and 280, or 39.82 per centum involved some portion of the arch. Of 109 cases collected by Meyers from the reports of his regiment, and from Netley Hospital, 75, about 70 per centum, affected the ascending aorta or arch. This table will show at a glance the relative frequency of the different portions of the aorta affected.

Aneurisms involving the convex portin of the arch frequently implicate the innominate, carotid or subclavian arteries, but judging from exhaustive researches aneurism of the central portion of the concave (inferior) surface of the arch must be very rare, as I failed to find a single case like mine.

Age.—Under the age of 20 years aneurism is not common, and only about 5 to 6 per centum are found under that of 30. The largest number of cases occur between the ages of 30 and 50 years; Lebert, however, says that they are most common between the ages of 45 and 60 years. Garland's 69 cases appear as follows:

	Per centum.	
Between the ages of 20 and 30 years, 4 cases	5.65	
Between the ages of 30 and 40 years, 21 cases	30.43	72.46
Between the ages of 40 and 50 years, 29 cases	42.03	
Between the ages of 50 and 60 years, 14 cases	20.29	
Between the ages of 60 and 70 years, 1 case	1.45	

Crisp's cases may be tabulated as follows (omitting indefinite cases):

		Per centum.
Between the ages of 10 and 20 years,	5 cases	0.994
Between the ages of 20 and 30 years,	71 cases	14.11
Between the ages of 30 and 40 years,	198 cases	39.56
Between the ages of 40 and 50 years,	128 cases	25.64
Between the ages of 50 and 60 years,	65 cases	12.92
Between the ages of 60 and 70 years,	25 cases	4.97
Between the ages of 70 and 80 years,	8 cases	1.59
Between the ages of 80 and 90 years,	2 cases	0.397

Sacculated or fusiform aneurism is more common in middle age, while dissecting aneurism is said to increase with advancing age (Peacock). My case was 32 years of age. Broca claimed that the liability to aneurism of the aorta above the diaphragm increased with advancing years, while the opposite obtained below the diaphragm.

Sex.—External aneurisms are most common in males, and internal aneurisms of the circumscribed form are most frequent in males, (?) being from 66.66 to 80 per centum (Blakiston, Crisp, Peacock). In 82 cases Garland found one seventh, Crisp found less than one eighth, and Hodgson about one ninth in females. In the Registrar-General's report (Great Britain, 1874) 685 deaths are attributed to aneurism, of which 537, or 89.5 per centum were males. Of 21 cases of dissecting aneurism 14 were females and 7 males.

Holmes believes that internal aneurisms are common among women whose way of life exposes them to the vascular excitement following intemperance, vice or mental emotions; and Rendle's statistics of internal aneurisms among female convicts show conclusively that mental depression and excitement are potent predisposing factors.

Aetiology.—The causes of aneurism may be mechanical, local or constitutional. A fall, blow, push, concussion of the body, running, jumping, heavy lifting, strains, sudden interference

with respiration, or stretching or compression of the neck after violent exertions, are potent factors if the aortic tunics are weakened from any cause. Injury of the wall of the vessel by stab, shot or other wound may be followed by traumatic aneurism. Certain employments requiring powerful exertions or violent straining causing over-distension of the aorta leading to slow atheromatous inflammation (Moxon) may cause aneurism. Tight lacing, constriction of the neck by tight collars or accoutrements (Frotnute). In the British army the deaths from aneurism exceed eleven times the mortality from the same disease in civil life, and this enormous death rate was attributed to the old-fashioned stock or collar (Meyers). Exposure, intemperance, severe or long continued mental emotions or excitement are Aetiological factors; continued intra-vascular pressure tends to weaken the walls of the vessel.

Mechanical impediments beyond the arch, loss of muscular tone in the tissues, embolus, vaso-motor palsey (Rokitansky) is denied by Niemeyer. The result of a ligature of a vessel tends to dilate the wall of the vessel.

Hereditary predisposition is questionable, but Fuller relates the history of a case whose paternal grandfather, uncle and father had all died of aneurism, and whose sister was afflicted with that disease.

The aneurismal diathesis is an improbable factor, but a case in which sixty-three aneurisms were found is on record.

Fatty degeneration, atheroma, calcific spots whose plates have sharp edges which wound the intima, chronic endarteritis, are direct causal factors. Ulceration or abscess of the wall of the vessel endarteritis even primary inflammation or atrophy of the external or middle coat of the artery may cause aneurism. The most prevalent seat of chronic endarteritis is in the

ascending aorta and arch, and rupture or aneurism is most common here.

Aortic regurgitant disease following rheumatic endocarditis may cause aneurism. Powell saw a lad aged 17 years suffering from aortic aneurism which could be traced only to two rheumatic attacks in his eleventh and twelfth years.

Gout and syphilis dispose to degenerative processes in the tunics of the arterial coats. George Ross asserts that fifty per centum of the aneurismal cases have had syphilis. It is remarkable that aneurism is thirteen and a half times more prevalent per 1,000 men in the British army than in the navy (Barwell). Certainly no one will maintain that sailors are more virtuous than soldiers. Both are subject to great hardships, violent exertions and exposure at certain times; but the soldier's uniform stretches and constricts the neck, keeping him in an unnatural and strained position, while the sailor's clothing is loose and his training gradual.

Any constitutional trouble which exerts a degenerative influence on the arterial coats may be a factor in the causation of aneurism. *Symptoms* are usually absent in the beginning of this disease, and death may result without the least suspicion of aneurism. Free living, intemperance or violent exertions may be followed gradually by palpitation, dyspnœa, deep-seated pain in the chest over which there may be a pulsating tumor and a bruit. The tumor may compress the air-tubes, œsophagus, neighboring blood vessels or the vagus and recurrent laryngeal nerves, and dropsy, discoloration, pain, altered voice, throat symptoms, disordered vision, headache, blood-spitting, may be produced, erosions of the bony walls of the chest may follow and palsy or paraplegia may obtain before death results.

The *pain* may be dull, intermittent, with exacerbations, or

persistent, hot, boring or burning in character, frequently agonizing and preventing rest or feeding; it may be seated over the tumor, under the left breast, at distant points and may shift from one point to another.

Dyspnœa is present when the aneurism compresses the air-tubes, or when innervation of the larynx is interfered with. The intrinsic muscles of the larynx are expiratory (Sanderson) and section of the recurrent laryngeal nerves paralyses the vocal cords which are sucked together at each inspiration (Reid, Ligallois). Compression of one of the pulmonary plexuses may produce dyspnœa resembling asthma (Gairdner). Irritation of the pneumogastric or any of its branches may cause spasmodic dyspnœa. The tumor may narrow the trachea or bronchi producing an accumulation of mucus at the narrowed point, hence an obstruction, and difficult breathing follows (Bristowe).

Dysphagia is not a prominent symptom and may be absent, although the œsophagus is compressed by the aneurism (Leudet); the gullet may be opened by erosion from the tumor and difficult swallowing may not be present (Fuller, Quain). In my case dysphagia was a very late symptom.

Palpitation and irregular or uneven pulse will be noted when the tumor or sac interferes with the normal flow of the blood current through the aorta or vessels which spring from the arch. Nervous reflex irritation may cause palpitation. In my case the pulse was never irregular or uneven nor more than ninety-six at any time, but cases are reported with a pulse from 130 to 140 beats per minute (Powell).

Headache, if present, may be severe, paroxysmal, continuous, and may simulate neuralgia, migraine or clavus.

Hæmoptysis is rare during the progress of aortic aneurism, but may become a marked symptom before death. Gairdner

mentions a case in which bloody expectoration preceded death for some time, and Blakiston records a case in which fragments of discolored coagula were expectorated with blood several weeks before death. (Diseases of the Heart.)

Unequal pupils must be received with caution, as one person in every fourteen has one pupil smaller than the other. (Robertson.) If the myosic and immovable pupil be present it is on the same side of the body as the aneurism; it is not a prominent symptom. Powell observed it in four cases out of thirty-six in aortic-arch aneurism; and Walshe rarely observed pupillary changes either larger or smaller in this disease.

By *inspection*, large, tortuous veins on the side of the neck and humeral region will be observed if any of the larger veins are compressed; the face may be reddened, there may be œdema or dropsy of the upper or lower part of the body; pulsation in the intercostal spaces if the aneurism closely approach the chest wall; the antero-posterior diameter of the upper part of the thorax may be increased, the superior portion of the sternum prominent, rounded and mottled with blue veins. There may be a cyanotic color in the face, neck or chest. If the tumor is very large the sternum and ribs may be displaced outwards, and in extreme cases the chest wall may he destroyed by erosion and the tumor projects externally.

Palpation will detect changes in the coats of the blood vessels and a difference in pulse-beat on the two sides of the body (if present). It may reveal two centers of synchronous pulsation within the chest with a perceptible thrill over the aneurism, which heaves and expands in every direction, and if distinct from the heart is diagnostic; but such an aneurism must be near the surface. If the interior of the sac-wall is thickened by laminated fibrin the thrill may be lost and the aneur-

ism then resembles a tumor lying on the aorta. In obscure cases "pressure with the flat of one hand on the anterior part of the chest while the other is placed between the shoulders during expiration" (Stokes) will aid in detecting deeply-seated impulse expanding in every direction. A distinct thrill felt with the beat of the tumor is not common. Powell observed it only eight times; Hope never saw a case of aneurism with thrill, and Walshe considered thrill a common sign in peripheral dilatation.

Percussion will reveal dullness or increased resistance if the aneurism is near the surface, of large dimensions, lined with laminated fibrin or coagula, or solidified. When the tumor is deeply seated or small, percussion will be either indefinite or negative.

Auscultation may reveal only a few bronchial râles, as in my case, or a systolic murmur accompanied by a bruit may be heard over the tumor. All auscultatory signs are most distinctly heard over the aneurism and may be conducted along the aorta and heard in the interscapular region. The bruit is not a reliable sign. Long ago Parkes pointed out the importance of ascertaining whether the bruit replaces one of the heart sounds (Clinical Lectures). In about one-third of the cases of aneurism there is no audible bruit; Powell noted its presence in twenty-two cases of thirty-six reported, it being double in twelve cases. Lebert claims to have observed it in the earlier stages of one-half of his cases. In dissecting aneurism this sign is absent.

Diastolic shock, when present, is significant of aneurism and an absolute sign if it follow a systolic impulse in disease of the ascending or transverse aorta. Powell noted this sign fourteen times in thirty-six cases, and it was also twice ob-

served in aneurism of the abdominal aorta. (Balfour, Wickham, Legg).

Diagnosis. The sign-center for aneurism of the ascending aorta is in the second right intercostal space close to the sterum. Cyanosis and dropsy of the upper part of the body supervene if the innominate vein or ascending vena cava is compressed. As the tumor enlarges the heart is displaced downward and the area of pulsation enlarges downward and to the right (Gibson).

The sign-center for the arch is the manubrium sterni towards its left edge. A forward projection of the tumor is not common; backward the tumor may press upon the trachea, bronchi, œsophagus, venæ cavæ, vagus and recurrent nerves. If the tumor springs from the concave surface of the arch and projects downward, there may be vague and indefinable signs, peculiar sensation along the trachea, globus, irritable cough, slight dyspnœa, and dysphagia when the tumor has somewhat enlarged. Pain at the apex of the heart may simulate cardiac neuralgia, intercostal neuralgia, pleurodynia, hysteria, etc. In dissecting aneurism involving the concave (inferior) surface of the arch unequal pulse is absent.

The sign-center for the descending portion of the arch is the left upper interscapular region. There may be severe pain in the back and shoulders, pulmonary dyspnœa, spasmodic in character, or diminished respiration and dullness at the base of the left lung. Very large aneurisms may cause erosion of the vertebræ and pressure upon the cord. There may be dysphagia, throat and eye symptoms.

Aneurism of the thoracic aorta below the arch is not very common, and is difficult to discover if small. Laryngeal

symptoms are not present. Severe and continuous pain may be the only symptom. If the tumor is large, curvature of the spinal column and anterior displacement of the heart will be noted and the œsophagus, bronchus, or portions of the left lung will be pressed upon. There may be pulsation and dullness over the tumor, and pressure upon the ascending cava will produce enlargement and tortuosity of the superficial veins, and œdema or dropsy of the lower extremities. Erosion of the spinal column may supervene and may produce most agonizing pain, palsy or paraplegia.

Aneurism of the convex portion of the arch frequently implicates the innominate, carotid or subclavian artery. It is frequently impossible to differentiate between aneurism of the arch simple, and aneurism implicating one of the vessels springing from the arch. Aneurism of the arch may be mistaken for innominate aneurism and *vice versa*. There are no absolute signs to differentiate one from the other. In a collection of twenty-four diagnosed innominate aneurisms (Barwell) more than thirty-three per centum proved either aortic aneurism or aortic dilatation on autopsy.

In dysphagia resulting from an obscure cause the œsophageal sound should be sparingly and cautiously used to avoid penetration and rapid death from hæmorrhage.

Sphygmographic tracings will aid in the diagnosis in many cases, by showing the decreased blood pressure on one side.

Differential Diagnosis.—"Aortic aneurisms may be one of the easiest problems in clinical medicine," or may present "difficulties which defeat the most skillful diagnostician." "It may be diagnosed as present" and *vice versa* (Garland). Many aneurisms show no signs of their presence

(Guttmann), and their murmurs frequently disappear temporarily or permanently (Eichhorst).

There is only one positively characteristic phenomenon of thoracic aneurism and that is the existence of a tumor in some part of the chest which beats isochronously with the heart, and which expands in every direction (Balfour). The diagnosis can rarely be made with certainty (Powell), for so long as an aortic aneurism has not obtained considerable dimensions, and has not touched the chest wall, characteristic symptoms are absent (Guttmann).

An aneurism is a tumor and many of its symptoms are signs of a tumor. It may pulsate from lying on or over the aorta, therefore it is essential to determine whether the tumor is solid or is an expanded vessel—a cystic tumor or large abscess lying on or over the aorta will present symptoms of aneurism and the diagnosis will be uncertain. A solid tumor may pulsate, but does not expand (Balfour), there is no bruit of a booming character (Hayden), nor accentuation of the second sound of the heart (Walshe). Aneurismal tumors change their size and mural tension (Peacock;) other tumors are not so affected. The following points will aid in diagnosis:

1st. Aneurismal tumors may rise and fall during coughing, swallowing or straining, and simultaneously expand in all directions.

2d. Under 25 years of age and absence of injury is against aneurism.

3d. Great emaciation with absence of internal pain negatives aneurism.

4th. Great cardiac displacement and absence of a large pulsating tumor negatives aneurism.

5th. Severe continuous or paroxysmal pain in the chest favors aneurism.

6th. Unequal pupils, irregular pulse in the radials or carotids, dysphagia, laryngeal or bronchial dyspnœa favor aneurism.

7th. "Absence of signs indicating ordinary heart or lung affections in an individual suffering persistent anomalous disturbances within the thorax, although he does not exhibit any failure of general health, affords strong suspicion of aneurism" (Walshe).

That diagnosis is frequently extremely difficult or impossible is shown by a host of cases, from Riles (10), Crisp (7), Smith, Bell, Guthrie, Feame, Pelletan, Dupuytren, Barwell and others, cases taken for troubles other than aortic aneurisms, and *vice versa.* In 1865 Heath tied both the right carotid and subclavian arteries for supposed innominate aneurism, and the autopsy four years later proved it aortic aneurism. Fenwick's case was diagnosed innominate aneurism and section proved it wholly aortic. My friend Prof. Senn relates a case diagnosed thoracic aneurism which on post-mortem examination proved to be a solid tumor overlying the aorta. Mahomed and Golding Bird report a case of abscess of a gland in the episternal notch taken for aneurism. In a case of innominate aneurism the symptoms were so vague that the diagnosis was made only when the sac was laid bare by incision. In another instance the presence of a tumor in the episternal notch, with double murmurs, pulsation, and pressure symptoms, on section proved to be a vascular tumor of the *manubrium sterni.* One of Guttmann's cases presented all the classic symptoms of aortic regurgitation and none of aneurism, in which section

showed the aortic valves intact, and revealed a large aneurism of the ascending aorta. Dujardin-Beaumetz's case presented contraction of the left pupil, sudden reddening of the left half of the face, transient aphonia, intermittent dyspnœa, suppression of left radial pulse, and a double souffle along the aorta, and the necropsy showed simple endarteritis of the arch without dilatation.

Inflammatory conditions implicating the vagus nerve or its thoracic branches may produce symptoms of the eye, throat and vascular system resembling aneurism.

Chronic empyema of the pleural cavity may simulate aneurism, but absence of bruit, more extensive dullness, irritative fever and pointing of the abscess would be distinctive signs. Birard saw a case of this kind in which a tumor to the left of the sternum, which appeared and pulsated like an aneurism, subsequently discharged pus.

Retraction of the margins of lung tissue overlapping the heart and aorta—presenting dullness, forcible local pulsation, bruit, palpitation and dyspnœa—has been mistaken for aortic aneurism (Powell), and aortic regurgitant disease may simulate aneurism (Hope).

Prognonis.—In the large majority of cases aortic aneurism is fatal, and "the uncertainty of the time and suddenness of death give this disease a peculiar terror," and frequently a dramatic ending. For while "the sac-wall may be thickening by fibrinous layers at one point fatal erosion may proceed at another."

Duration.—The progress of anuerism is rapid and in most cases fatal within a few years. From a large number of observations Lebert places the average duration from six months to four years. In 40 cases of which the duration of the disease was well known 20, or 50 per centum, died during the first year, 9 lived 2 years and 3 lingered 5 years (Garland).

Peacock and others limit the time to five years; but many cases are not diagnosed during life, others only shortly before death, and hence an exact limit cannot be given.

Mode of death.—In many cases the direct cause of death is rupture of the aneurism into cavities, vessels or tubes. In a series of 106 cases 39 terminated by rupture, and 13 of these or 33 per centum burst into the pericardium. Of Thuman's 18 cases of thoracic anuerism 11 communicated with the pulmonary artery, 4 with the cavity of the heart, and 3 with the venæ cavæ. Of 42 cases collected by Sibson and Barwell:

Seventeen cases of aneurism of the ascending aorta communicated with the pulmonary artery.

Six cases of aneurism of the ascending aorta communicated with the right auricle.

Three cases of aneurism of the ascending aorta communicated with the right ventricle.

Four cases of aneurism of the ascending aorta communicated with the descending cava.

Three cases of aneurism of the ascending aorta communicated with the left ventricle.

Two cases of aneurism of the transverse aorta communicated with the descending cava.

Seven cases of aneurism of the descending aorta communicated with the ascending cava.

Ascending aortic aneurism, may burst into the right pleural cavity or pericardium externally. Aneurism of the arch may burst into either pleural cavity, the trachea, the bronchi the œsophagus, the lungs, the mediastina, or externally. Aneurism below the arch may burst externally into the left pleural cavity, the œsophagus, or the spinal canal.

Rupture of an aneurism is not always immediately fatal. The so-called "weeping aneurism" may pour out small quan-

tities of blood for weeks. Neligan's case discharged blood through an opening near the second rib on the right side for more than a year, and the hæmorrhage was finally checked and the tumor solidified. In another instance a patient mistook an aneurism for a "bloodboil," and squeezed it with his chin to favor bleeding until he fainted. Hæmorrhage then ceased and did not recur. Aneurism may cause death indirectly by causing secondary emboli or infarcts; by asphyxia, starvation or exhaustion, and from the size or pressure of the tumor. Sudden formation of a soft clot within the sac may result in inflammation and suppuration which may kill the patient before the tumor bursts. A very small number of cases die of acute intercurrent disease.

The more latent the aneurism the more frequently death occurs by rupture.

Notwithstanding Flint's dictum, "that clinical observation shows that patients afflicted with thoracic aneurism rarely have pulmonary tuberculosis," it is evident that interference with respiration has a deleterious effect on the lungs, for in Harrot's collection of 77 cases phthisis was established as present in 18 cases of 42 examined. The remaining 35 cases were not examined to discover lung changes.

Treatment, in many cases of thoracic aneurism, is utterly futile, but in a large number euthanasia is desirable to relieve the pain and to improve the general health. The first step in treatment is absolute rest in the recumbent or semi-recumbent position. Worry, excitement, anger and violent mental agitation may prove rapidly fatal by syncope or rupture of the sac, and hence there must be mental quietude. Stimulants must be prohibited, the diet carefully regulated, the bowels kept soluble and the kidneys active. A long rest

has more than once shown remarkable results. It is difficult to carry out surgical measures, and the treatment promising best results is rest and such remedies as may be required. The ancient treatment was copious venesection, frequently carried to syncope, which was supposed to possess some occult power to cause coagulation within the sac (Thackrah, Gulliver and others).

Valsalva (1748) treated aneurism by phlebotomy and enough diet to starve his patients, and forty days rest in bed was rigorously carried out. Tufenell improved Valsalva's method, by omitting venesection and giving either low diet or dry diet. The results from this treatment are encouraging, and it deserves repetition with appropriate remedies added.

The number of drugs or remedies employed and recommended for aneurism is legion, but most of them are utterly useless. It is well to remember that thoracic aneurism is fatal within a certain time, and that the patient's distress must be relieved; to prolong his life and relieve his suffering being our aim. The remedies may be arterial sedatives, nervines, anodynes, alteratives, and probably tonics in some cases.

Intra-vascular pressure must be reduced, and the pulse brought down to 60 and kept there. The best remedy is tincture of aconite root in small doses frequently repeated. Aconite not only reduces pulse and blood pressure, but benumbs the nervous system as well. Toxic doses may not do so well as in Prof. Pancoast's case, in which a subclavian aneurism was cured by an overdose of aconite taken by accident! Tincture of veratrum viride, or veratria ointment, may be used, but both are powerful depressants, and

vomiting and collapse must be avoided. Gelsemium is a good sedative and relieves pain. Digitalis is a dangerous drug in thoracic aneurism, and should not be used, because of its cumulative tendency aud of the increase of the heart's force which it causes. Belladonna, or atropia, is useful in small doses, and is highly extolled in Europe. To control nervous reflex irritation the bromides and dilute hydrocyanic acid stand at the head of the list. Chloral hydrate or urethan may be used to overcome insomnia, anodynes to assuage pain, but opium or its salts should not be too freely exhibited. Large doses of the bromides are required to control the nervous system at times, and they should be exhibited until the system is well under control, when the dose may be reduced or given at longer intervals. The writer has frequently taken four drams of the bromide of potassium at a single dose to relieve an agonizing migraine, from which the relief was prompt, within an hour or two, and no bad after effects followed.

Ergotin was successfully employed by Langeubeck (1869) by parenchymatous injections near the aneurism. It reduced the size of the tumor, lessened the pulsation, and markedly relieved the pain. Dutoit (1871) and Carlin (1878) had equally favorable results. The fluid extract may be given internally.

Tannin and acetate of lead have been recommended, but aside from astringency their therapeutic power over aneurism must be small indeed.

Iodide of potassium was first prescribed in cases of aneurism by Chutterbutty, of Calcutta (1862), and recommended by Roberts (1863) and championed by Balfour a little later. At the present time it is generally considered a sort of specific in

internal aneurism. Berènyi cured (?) his case of aortic aneurism in two months by ordinary doses! Cayley's case was not benefited by "diet and iodide of potash." Whether the iodide causes increased coagulation of the blood, or produces a slow thickening of the sac-wall (Bramwell) is not material. Its alterative and "dissolving effect" on syphilitic tissue changes have made this salt a so-called specific, and since aneurism is frequently the sequence of venereal infection the iodide may be valuable on that score. But judging from the results of a host of cases treated by this drug it is evident that rest, diet and total abstention from stimulants received no consideration in the results obtained; and, further, when the patient threw off restrictions and indulged in stimulants, plentiful feeding, or exercise, the disease advanced rapidly in spite of large doses of the iodide. It is very difficult to prove its "specific value" in aneurism, for the potassic iodide cannot be given alone while everything else is withheld. Sir William Gull and Holmes consider it of little value, and Barwell says, "I have not found a single case of aneurism cured by iodide of potash." It is a useful remedy in this disease, but overrated, unless, we repeat, aneurism is caused by or results from syphilitic infection, and if so mercuric preparations singly or combined with potassium iodide will be doubly valuable.

Surgical treatment of thoracic aneurism has, with few exceptions, proved fatal in a very short time. Double distal ligature of the right carotid and subclavian was successfully performed by Heath, and patient survived four years; by Barwell, whose patient survived fifteen months; by Wyeth, whose patient died a year later of diarrhœa; by Lediard, whose patient died about ten months later; by Kelly, whose patient was alive at last accounts, and unsuccessfully by Ashhurst, who tied the right common carotid, and death occurred next day.

Pressure or compression are, of course, out of the question, and cauteries as employed for aneurism of the anterior palatine artery (Chassaignac), and of the palm (Newmann), are not applicable in aortic aneurism.

Monteggio's method of injecting coagulating liquids should not be attempted, as the danger from embolism, infarcts, etc., is too great.

Dieulafoy and Marsacci injected a weak salt solution, 1:20, into the cavity of the aneurism, but the results were far from brilliant, and the method is useless. Acupuncture originated with Home (1796), who expected that a foreign body within the sac would cause a coagulum, but it led to no practical results (Velpeau, Pravaz, Agnew, and others). MacEwen was more successful. Heath introduced three pairs of needles, interlacing each other, into a subclavian aneurism and left them four days, the result was death; tumor solid (?). Mialago's cases all ended fatally shortly after the operation (1850–5). Rizzoli's first case of aneurism (at the elbow) on withdrawal of needles required amputation to check hemorrhage. In his second case (ilio-femoral) digital compression failing, acupuncture reduced the size of the tumor and lessened the pulsation. Murray's second case (aortic aneurism) was twice punctured, and erysipelas developed in the punctures and caused death. His first case (aneurism of the arch and innominate artery) was treated with (18–20) needles left *in situ* twenty-four hours, and then twenty-four feet of fine iron were introduced. Sudden death occurred two weeks later. His fourth case (saccular subclavian aneurism) was completely transfixed with (20–30) long needles at intervals, causing consolidation, decrease in size of tumor, and relief from pain.

Galvanism was added to acupuncture by Benjamin Phillips (1829) in England and established in France by Pravaz, and perfected by Ciniselli, Duncan, Fraser, Poore, Althaus et al. In fusiform aneurism galvano-puncture is useless, but it may be beneficial in sacculated aneurism. Cinicelli treated thirty-seven cases of aortic aneurisms by galvano-puncture and cured six. Poore's eight cases of thoracic aneurism ended fatally by same treatment. Dujardin-Beaumetz's case of thoracic aneurism died from electrolysis. Black's case of thoracic aneurism died from galvano-puncture, and at the autopsy no coagula were found. Barwell punctured the sac-wall of a thoracic aneurism with a hollow ivory needle, through which he introduced ten feet of steel wire which he connected with the positive pole of a galvanic battery, using a current of about nine or ten milliamperes, and death occurred a week later, with little coagulation.

Whether the needles or the galvanic current produce the best effect it is difficult to determine, but a foreign body produces the same effect in the aneurism whether attached to a battery or not (Heath, Marshal, MacEwen), and the whole benefit derived from galvano-puncture is caused by inflammation and thickening of the sac-wall (Paul). But the dangers of galvano-puncture (Barwell), hæmorrhage, eschars, inflammation of the sac-wall, possible suppuration, embolism, infarcts, etc., are so formidable and the result so uniformly fatal that the risk is too great.

Fine iron wire, twenty-six yards, were introduced through a fine canula into an aneurism of the aortic arch, which had destroyed a portion of the bony wall of the chest, by Moore, in 1864. The operation was easy and almost painless. Inflammation of the sac and surrounding structure, emboli,

infarcts, and great pain followed, and death occurred on the fifth day, and the wire was found to be imbedded in a clot.

Bacelli introduced fine watch-springs into the cavity of the aneurism, and both of his cases proved fatal in a short time.

Murray (third case) introduced twenty feet of catgut into an aneurism of the arch and innominate artery. Death occurred, the catgut was softened and no coagula was found.

Horse-hair (twenty-four feet, nine inches) was introduced into a right subclavian aneurism by Levis (1873). Death occurred from rupture of sac and the hair was found imbedded in a clot.

Bryant introduced thirty feet of horse-hair into a popliteal aneurism and death on fourth day; the tumor being almost solid.

Stimson introduced fifteen pieces of horse hair, each six inches long, into an ilio-femoral aneurism without affect on the tumor.

From the foregoing it is evideut that the introduction of foreign bodies into the cavity of an aneurism is generally followed by disastrous results. The practice is pernicious and almost invariably fatal within a very short time. A clot may be found about the coils, but the complications are many, varied and fatal. Thoracic aneurisms are best managed by perfect rest, carefully regulated diet, total abstinence from all stimulants and the use of such remedies as may be necessary to control the circulation, assuage pain, produce the requisite amount of sleep, and if possible, to impress the disease and check its march to a fatal issue.

BIBLIOGRAPHY.

Ashhurst, Surgery; Chelius, Chirurgie; DaCosta, Medical diagnosis; Eichhorst, Krankheiten d. Resp. u. Circ. Org.; Flint's Practice of Medicine; Flints, Clinical Medicine; Hall, Medical Diagnosis; Holmes, System of Surgery; International, System

of Surgery; Niemeyer, Practice of Medicine; Pepper, System of Medicine; Quain, Dictionary of Medicine; Reynolds, System of Medicine; Real, Encyclopæd. d. Gesamt. Heilkunde; Reference, Hand-book of Medical Sciences; Wagner, General Pathology, and from Personal Communication; Medical Journals and other sources.

296 West Water Street, Milwaukee.

PSEUDO-MEMBRANOUS BRONCHITIS. *By* W. R. PATTON, M.D.

On the night of March 30, 1879, I was called to see Mrs. J—— in consultation with Dr. H., who had been attending the patient from some time in the preceding November. From him, and from the friends of the patient, I learned that her trouble had begun with wheezing at night, very much as in croup, which at first occurred only occasionally. It increased in severity at each succeeding attack until she finally had to sit up in bed in order to breath. About January 1st, 1880, she began to have a troublesome cough. The cough was hoarse and wheezing, and she could lie down only between the paroxysms of coughing. These symptoms increased in severity until her life was despaired of. The fact that the patient was pregnant at this time increased the gravity of the case, but hope was entertained that if she could live until after confinement she would recover.

On March 30th, she was delivered of a healthy, well developed male child, but experienced no relief from her cough. My first visit was made on March 30th, 1880. I found the patient sitting up in bed, with no covering except her nightdress, and she could endure no more. She could not endure the doors or windows closed, although it was snow-

ing, and a very cold, blustering night. She was the picture of death She seemed almost bloodless; had no appetite, and could take only a swallow or two of anything at a time, without bringing on a paroxysm of coughing, which would continue as long as she had strength enough to cough. The pulse was 140 per minute and very weak. The urine was scanty, thick, and heavily loaded with solids, and there was a puffy œdematous condition of the eyelids and of the skin over the body. Examination of the lungs revealed no trouble except in the bronchial tubes. I could detect no lesion in the throat, and considered the trouble located only in the bronchial tubes; but in this opinion the attending physician did not concur; he regarded it as a pulmonary affection.

As a result of this difference in diagnosis the patient was placed under my professional care.

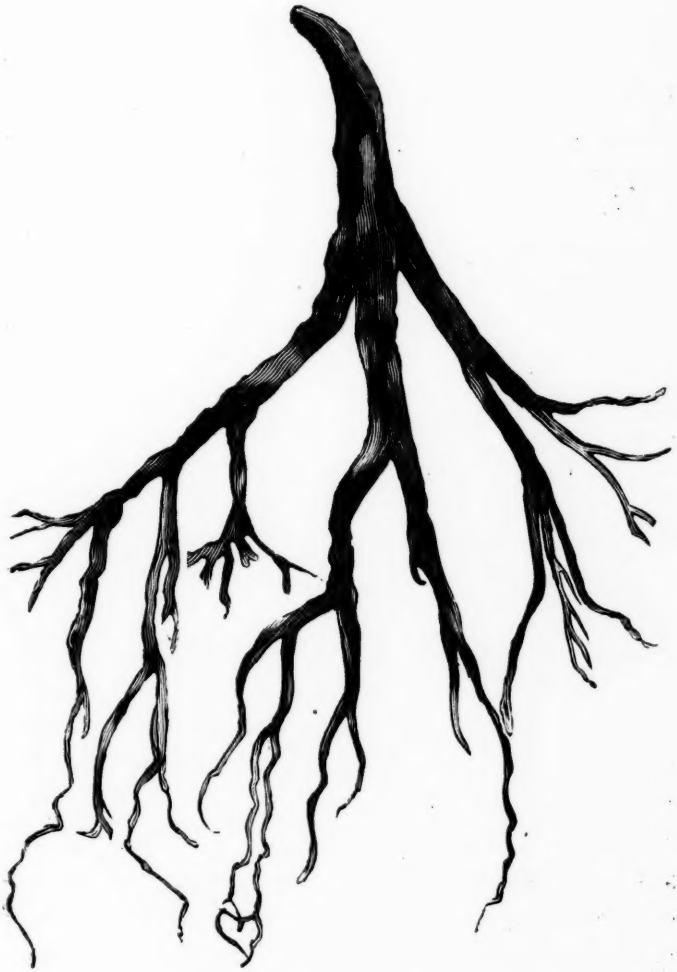
I prescribed a mixture of hive-syrup, syrup of ipecac, tincture of digitalis, and grindelia robusta, together with a tonic of carbonate of iron, gentian and Peruvian bark in gin, and pursued this course for three days. At the expiration of three days, to my astonishment, she coughed up a specimen of plastic material, (a.) which was a complete cast of the bronchial tubes from the largest to the smallest extremities.*

She was so much relieved by the expectoration of this cast that she could immediately lie down and sleep, for the first time in two months, for during that length of time, she had taken only short naps, and these in a sitting posture. On the next morning when shown the cast which had been expectorated, I was greatly astonished, and concluded that it was a different kind of bronchitis from what I had sup-

*The cast and a photograph of it were subsequently sent to Professor Ingals of Chicago. The accompanying sketch is from a photograph of it.

posed, and different from any I had ever seen. It has been my fortune not to see another, and only a repetition in the

(a.)



same case. She expectorated, during the progress of the case, twenty or thirty of these membranous casts, but none so complete as the first one, and none with so much difficulty.

I continued the treatment already mentioned with the addition of fifteen drops of the fluid extract of ergot every three hours during the day or when awake. I hoped by these measures to facilitate the expectoration, to improve the general tone of the body, and by the ergot acting on the blood-vessels, to prevent the formation of any more casts. Every day or two for some time she coughed up one or more of these casts, but they were more easily expectorated and were smaller.

In the course of six weeks she seemed so much better that I stopped visiting her, ordering the use of the tonic and ergot for a week, and then the discontinuance of all medicines.

The patient continued in apparently perfect health until she again became pregnant in the summer of 1881. Then the same condition again occurred, but neither so severe nor so alarming. She began immediately to take the tonic and cough mixture mentioned, and also the ergot in ten-drop doses, and no plastic material formed, or at least none was noticed in the sputa. Otherwise the symptoms were the same as those of the first attack. Shortly after confinement she made an excellent recovery, and discontinued the medicines.

The patient continued well until the summer of 1883, when about two months before her third confinement, the same symptoms returned followed by dropsy, but there was no membrane expectorated. In this confinement she was delivered of an eight-month's child, and died, two weeks after delivery, with general anasarca. A few days before her

death she suffered greatly from dyspnœa, and was only able to breathe at all when sitting up, or standing with the assistance of friends. Membranes were evidently present, but she could not expectorate them. One singularity of this case was its recurrence during pregnancy. Prior to the last attack of pseudo-membranous bronchitis, the family had moved out of my neighborhood, and the patient was attended by another physician until almost a week before her death, when I was again called.

Charleston, Illinois.

EDITORIAL.

MORTALITY IN THE MEDICAL PROFESSION.

The long list of deaths which occurred in the ranks of the medical profession during the year 1886, both at home and abroad, embraces the names of many who have, for years, been recognized as leading spirits in the profession, but who are now numbered among those who have passed away.

In this country no medical man of his generation has occupied a more prominent position in the profession than Professor Austin Flint, M. D.,LL.D.

At the time of his death he was little less than seventy-four years of age, and he was as rich in honors as he was in years.

By his works as well as personally, he was well known and esteemed on both sides of the Atlantic ocean.

In addition to the official positions which he occupied in this country, he was the President-elect of the Ninth International Medical Congress, which is to meet in Washington, D. C., in September of this year. Whilst in the death of Professor Flint general medicine lost one of the brightest lights in this country, so general surgery lost, in the death of Professor Alfred C. Post, M.D., and Frank H. Hamilton, M.D., two of its representative men. Both were rich in years and in good work, faithfully performed.

Among the names of other eminent men who died during the year should be embraced the names of Professors John P.

Gray, M.D.,LL.D., of Utica, J. F. Miner of Buffalo, W. H. Dudley of Brooklyn, J. G. Richardson of Philadelphia.

In England, two of the most prominent deaths during the year were Drs. Walter Moxon of Guy's Hospital, and James G. Wakley of the London *Lancet.*

In France, Professor Paul Bert, the eminent physiologist, Dr. Le Grand Du Saulle, of La Salpêtriere, Dr. Brochfontaine of the Laboratory of the Faculty of Medicine of Paris, Dr. Arvedec De Chambre, editor of the *Gazette Hebdomodaire*, of Paris, are among the notable deaths.

In other continental countries of Europe, death has claimed among its victims Professor Theodore Friederick Von Frerichs of Berlin, Professor Von Gudden, whose lamentable death with King Ludwig of Bavaria is well remembered; Professor Auspitz, editor of the *Archives für Dermatologie und Syphilis*; Professor Hermann Maas of Würzburg, Professor Grobe of Greifswald, Professor Lushinger of Zurich, Professor A. Burckhardt-Merian of Basle, Professor C. G. Santesson of Stockholm, and, not the least, Professor Panum of Copenhagen.

The works of these great men are so numerous and so well known as need no mention here, even if space permitted but a partial recapitulation. Most of them are monuments to their memory, which are enduring, even after their authors have passed away.

THE ANNUAL REPORT OF THE ILLINOIS STATE BOARD OF HEALTH, of which a brief notice appears in another part of the JOURNAL AND EXAMINER, shows the good work that is being done by that board. Whatever misgivings there were in the minds of the medical profession of this state when the board was created, they must have been dispelled long

before this time, in view of the good work and constant progress made by it from year to year. Not only has the sanitary condition of the state been improved under the requirements of the board, but the status of the medical profession of the state has been elevated during that time, and not a small part of the credit for it is due that board for the work that it has done through the power vested in it under the *Medical Practice Act.* Other states have seen the beneficial results that have come from its acts, and have copied after it.

The work of compiling the names and standing of all of the medical colleges of the United States and of Canada, done by the board, is recognized as superior to anything of the kind accomplished in this country, and has called forth much praise for its thoroughness and evidence of its utility.

In the effort being made by the board to encourage more liberal education in the medical profession, and to gradually elevate the standard of requirement by medical colleges before conferring a degree which, in many cases, carries with it a right to claim a license to practice medicine in this state, and entitles the holder of it to practice without other permit in those states where other permits are not required, the board will have the approval and encouragement of the more intelligent part of the medical profession of this state and the respect of those in other states.

In view of its efficiency, its integrity, and the good work already accomplished, and still more that it is striving to accomplish, the legislature should be liberal in its appropriations for the carrying on of its work in the future.

Dr. N. S. Davis completed his three-score years and ten on the 8th of January, and in honor of the event a large number of his friends assembled at his residence on that occasion to

congratulate him, and to show their appreciation of the results of his long years of faithful and unselfish labor in the field of medicine.

Several addresses, appropriate to the occasion, were delivered, and he was the recipient of numerous handsome presents.

In replying to the addresses, Dr. Davis recalled the incidents of his early life; the struggles of the first years of his professional career, and the difficulties attending the organizing of the American Medical Association, of which he is conceded to be the father.

His triumphs over all obstacles teach a useful *lesson of life*, and show how much may be accomplished by one man where faithful and persistent effort is made to benefit his fellow man.

Beginning life amid obstacles that would have discouraged and deterred the average man from undertaking the task he assigned himself, he persevered until one by one they vanished before his tireless energy.

Having spent his earlier years in manual labor upon a farm, he worked his way into the medical profession, and, whilst advancing himself, he has done much to keep the medical profession of America advancing with him; and to-day, as President-Elect of the *Ninth International Medical Congress*, to be held in Washington in September of this year, he holds the highest post of honor in the medical profession of the world.

At home and abroad it is conceded that in conferring that honor on this veteran, it honored those who gave it as well as him who received it, and, best of all, who merited it; and the JOURNAL AND EXAMINER adds its congratulations to him who thus stands *primus inter pares*, and it reiterates the oft-expressed wish that he may long be spared to enjoy the just rewards of an honorable professional career.

FOREIGN CORRESPONDENCE.

SURGERY ON THE CONTINENT OF EUROPE.

To the Editor of THE CHICAGO MEDICAL JOURNAL AND EXAMINER:

Nine years ago I made a tour through Europe, mainly to collect such new ideas as I could obtain at the clinics in the different hospitals.

Lister was at that time still at Edinburgh, and I hurried there to study under the master himself what at that time was considered par excellence antiseptic surgery.

His germ theory of the contamination of surgical wounds was in such perfect accord with the preconceived notions of many German investigators, that I found at both Vienna and Berlin his modes of procedure, with all their paraphernalia, carried out. During a second tour of observation, after the lapse of less than a decennial, I find that the Lister spray is not generally employed, and has, in fact, been banished by the very man who first called it into requisition. After observing the methods of different European surgeons, each claiming that he takes full antiseptic precautions in operating, one is forced to the conclusion that the scientific world does not agree as to what constitutes antiseptic practice in surgery.

Bilroth in Vienna, and Bergmann in Berlin, for instance, take off their coats and vests, put on clean linen operating-gowns, scrub their hands with a brush and soap, and then wash them in a sublimate solution before touching the

patient. The surface to be operated upon is washed in the same manner, and shaved with a razor if the parts are covered with an abundant growth of hair. Bergmann is the most painstaking man I have seen operate, and his results are the best; that is, his wounds heal more uniformly without suppuration or constitutional reaction.

He condemns the use of instruments with horn handles, believing that it is difficult to render them aseptic. I had the good fortune to attend his clinic during the college vacation, when he was lecturing to and operating for the instruction of the army surgeons.

There is a feature about his operations that, in my opinion, plays a most important rôle, and that is the care with which he ligates every bleeding vessel, however small. For this purpose he uses only catgut, even to ligate the femoral artery.

For example, I have seen him operate many times for cancer of the breast in the female. He extends his incision from the inner and lower border of the breast as far as the level of the upper border of the axillary space, and thus opens up the entire axilla with one long, continuous incision, from which he not only removes the mamma but the entire chain of axillary glands. By this mode of operating he claims better results than are generally obtained. He claims that the glands in the armpit, although not apparently, are yet very generally affected, and that they should, consequently, be removed. In this operation I have seen him tie as many as sixty blood vessels, and never saw him ligate less than twenty-five. He never uses sponges, but in their stead employs a thin gauze disinfected with the bichloride of mercury. He uses a drainage tube only in cases of large sacks left after

an operation. He sprinkles iodoform over the edges of the wound, and covers the same with a thick layer of his gauze. Over this he places antiseptic cotton, and lastly bandages the parts firmly. If the patient has no constitutional reaction in the way of fever, he leaves this first dressing in place from three to five days. Erysipelas is an accident which he never seemed to fear, and I never saw a case in his wards.

Hospital Necker, Paris. Service of Professor Le Fort. November 12th, 1886.—The first case was a woman, 30 years of age, an employe in a match factory, suffering from a disease of the inferior maxilla, caused by phosphorus poisoning. Professor Le Fort removed without much difficulty a large sequestrum, scooped out the cavity with a sharp spoon, and then plugged it with iodoform gauze.

The next patient was a woman of 60 years of age, from whom Dr. Le Fort had removed the breast for cancer some years before, which had now reappeared in the old cicatrix He spoke, before beginning to operate, of the danger of erysipelas after operations of this kind in women of this age, and of the necessity of using all necessary antiseptic precautions to prevent its occurrence; but he proceeded to operate after simply washing his hands in soap and water, using no brush and not cleaning his finger nails. He did not tie a single artery, using torsion to arrest the bleeding, and applied the thermo-cautery to such vessels as still bled after this procedure.

The third case was that of a workman, 23 years of age, who some months previously had severed the extensor tendon of the thumb at the middle of the metacarpal bone. The operation consisted in reopening the wound and uniting the severed ends of the tendon. Dr. Le Fort said that for-

merly such operations had failed, but that since the introduction of antiseptic surgery better results had been obtained. The patient was a little slow in pulling off his old dirty shoes after he had mounted upon the operating table, and Dr. Le Fort untied and pulled off the last shoe himself, and then proceeded to operate without washing or cleaning his hands in any way. The manner of uniting the two ends of the tendon was instructive. He used catgut and passed the needle through one tendon, tied his ligature so as to ligate about one third of its circumference, and then passed the needle through the other end of the tendon and tied that in the same manner. By this means the ligature was firmly attached to both ends of the tendon. He claimed that if one simply sutured the parts together as one would the edges of a wound in the skin, the direction of the fibers was such that the suture would not hold.

Professor Galezowski, whose eye clinic I consider one of the very best in Europe, is always talking about antisepsis. After his cataract operations he puts into the eye a gelatin disc impregnated with the bichloride of mercury, and then puts over the eye a compress of iodoform gauze. In his last 600 operations he has only had sloughing of the cornea in three cases. Yet he will examine and treat from twenty-five to fifty cases of disease of the external eye of every imaginable form, and proceed to operate after simply wiping his fingers on a towel wet in a solution of carbolic acid Nothing suits a Frenchman better than an opportunity to hold a German up as an object of ridicule. Dr. Galezowski took occasion to gratify this taste one day by giving us a synopsis of the rules laid down at a late meeting of the Ophthalmological Society of Hamburg.

HOPITAL DE LA PITIÉ.

At this hospital I saw the most bungling laparotomy I ever have seen performed, excepting, perhaps, one ten years ago, performed by a gynæcologist who at that time, and even to-day, is recognized as one of the first authorities in England.

To see what a perfect failure two such great authors on the subject of diseases of women are, when they attempt to do an ovariotomy, has led me to the conclusion that there is an especial skill required for the performance of this operation which a few men possess, and many cannot acquire. This man's idea of antisepsis was evidently the use of the spray, for while the room was so full of the vapor of carbolic acid that one could hardly breathe, one of his assistants had just finished dressing a woman's leg affected with acute phlegmasia dolens, and went directly from that case to the operating room without changing his clothing. The man who handed the instruments had dirt under his finger nails, and the numerous assistants who attended to the sponges, did not wash their hands after coming into the operating room. The cyst was one of the broad ligament, it had a great many attachments, and the operation was a difficult one. The patient died twenty-four hours after the operation, but whether from carbolic-acid poisoning or from the operation itself I was unable to settle in my own mind.

I attended A. Martin's vacation course for physicians at Berlin, and will give a brief résumé of his idea of antisepsis.

The room where he operates is impregnated the evening before the operation with a ten per centum spray of carbolic acid, and then closed up tightly for the night. In the morning before the operation, he, his two assistants and the nurse,

each take a bath and put on entirely clean clothing. Every one of his class who is to witness the operation is required to take a full bath just previous to entering the room as well as to change his clothing throughout.

Those who touch his instruments, that is, his nurse and one assistant, are required to wash their hands thoroughly in a solution of bichloride of mercury.

Martin operates with a rapidity that is wonderful. I have seen him remove an ovarian cyst and close the wound in seven minutes, and have frequently seen him do the operation inside of ten minutes. He considers dispatch a prime element of success, and thinks that Lawson Tait's idea of a small abdominal incision is an erroneous one.

He thinks that too many assistants are bad and tells of performing an ovariotomy entirely unassisted, those he depended upon being taken with a fainting fit and hence unable to perform their duty.

Professor Verneuil still continues to teach at La Pitié and is as full of vigor and energy as he was when I first heard him twenty years ago. My time has been so much occupied in other directions that I have not been able to follow him regularly. He has, however, a hobby which he is riding just now, and that is, the discussion of glandular tumors by the interstitial injection of a ten per centum solution of iodoform in ether. His results are apparently very good.

Hôpital Saint Louis contains 1,043 beds, 625 of which are devoted to diseases of the skin. Under the management and teaching of Professor Fournier, it is one of the best places in Europe to study this branch of medicine.

M. Péan is the surgeon in chief of this hospital, where more than 2,000 cases of a surgical character are annually

treated. He is a bold and rapid operator and a fine teacher. He talks as every one else does of antisepsis, although he wears each day the same old black swallow-tailed coat during his operations, upon which the accumulation of blood-spots date back many months. He always washes his hands between each operation in soap suds, but not carefully, from a German standpoint. In his ovariotomies he is more careful, disinfecting his hands, sponges and instruments with the bichloride of mercury.

Among the first patients I saw Pean operate on this winter was a man 36 years of age, who had an attack of pleurisy two years before. The pleural cavity on the left side secreted a large amount of fluid, which was removed two or three times by the aspirator.

Some eight months ago a complication occurred which Pean remarked was very unusual, and that was an artificial opening was established between the ninth and tenth ribs on a line with the nipple, from which pus flowed nearly constantly, but not sufficiently to keep the pus-sac empty. To establish perfect drainage, Péan resected a portion of the seventh, eighth and ninth ribs, and when he had thus laid bare the pleural sac, he opened the same widely with the thermo-cautery, and evacuated three litres of pus.

About the time the pus ceased to flow the patient ceased to breathe and died on the table in spite of every effort to resuscitate him. Pean attributed the death of this patient, not to the anæsthetic, but to the sudden movement of the heart toward its natural position from which it had been displaced toward the right by the fluid. This is the only place where I have seen used the apparatus of the late lamented Paul Bert for the administration of chloroform. Its inventor

claimed that by its use atmospheric air and the vapor of chloroform were mixed in such a proportion, always definite and the same, as to render the use of this most valuable anæsthetic perfectly and absolutely safe. The instrument is an expensive and complicated one and has not been generally adopted even here in Paris.

This is the fourth patient I have seen die on the operating table under chloroform since I came to Europe. Of this number one occurred in the service of an interne at Vienna, in the operating room of Professor Albert.

The patient was a young woman 23 years of age, apparently in perfect health, and was being operated upon for the removal of a lymphoma the size of a small hen's egg situated at the outer angle of the inferior maxillary bone.

Not more than two or three drachms of chloroform had been given when the patient ceased to breathe, and no amount of artificial respiration would resuscitate her. A careful post-mortem failed to give any explanation of the cause of death, as the heart was normal and no air had gained access to the circulation.

I saw two other patients come near dying, one being operated on by Schroeder and the other by Bergmann.

Shroeder, by the way, always has a battery at hand and ready for use in such an emergency.

In Bergmann's case he executed a little maneuver that he places great stress upon; and that is, while his assistants execute rapidly the movements necessary for artificial respiration he introduces his finger into the mouth and holds up the the epiglotis. He claims that this organ will often close down firmly and that manipulations are of no use unless one operates in this manner.

December 11th, 1886. The first patient to-day was a woman 33 years of age, married, but had never borne children.

She had suffered severely from dysmenorrhœa since the first appearance of her menses at the age of eighteen. Lately she had not only suffered at her menstrual periods, but was confined to the bed for a large part of every month with excruciating pains through her pelvis, mostly on each side running in the direction of the broad ligaments.

Frequent attacks of an hysterical character accompanied these symptoms.

Physical examination failed to indicate any pathological change on the part of the pelvic organs. Péan is fond of talking, and this patient furnished him a text for a long discourse on the subject of the castration of the female for nervous disturbances as practiced by Hegar, Battey and others.

He said that he had practiced the removal of the ovaries frequently in this class of cases, but had usually found the proceeding of little or no benefit. He said that the relation which the tubes and ovaries bear to these manifold nervous manifestations might be problematic, but that they sustained an intimate relation to the womb itself, was an unquestionable fact. Therefore he thinks that the more rational practice is the total extirpation of the womb.

This operation he proceeded to perform in a manner different from that practiced by Karl Braun and Martin.

Beginning at the posterior vagino-cervical junction, keeping close to the uterine tissue, he cut with the scissors until he had opened into the peritoneal cavity through the cul-de-sac of Douglas.

To prevent and arrest hæmorrhage he applied his hæmostatic forceps in such a manner as to completely include the free margin of the incision he had made.

He now began the same dissection anteriorly separating the uterus from the bladder until he had opened into the peritoneal cavity.

He next introduced the index finger into the lower opening and brought it out at the upper one, and thus held the broad ligament of one side within his grasp. This he clamped by passing a long-bladed hæmostatic forceps from above downward and another from below upward, and thus having all the tissues of this membrane compressed, he divided the same close to the womb. Each broad ligament was treated in the same manner.

When the operation was completed, there were eleven pairs of forceps projecting from the vagina which he said he should leave in place, the smaller ones 24 hours, and the larger ones 48 hours. The vaginal cavity was washed out with a bichloride solution, tamponed with iodoform gauze, and the patient put to bed. Very little blood was lost.

The womb was cut open and showed only a slight endometritis of the body. I took pains to look after this patient, as to the outcome, and as far as the operation was concerned she made a rapid recovery with very little constitutional disturbance, but as to the relief of the symptoms for which this desperate operation was done enough time has not yet elapsed to determine that most important question.

During the last meeting of the North-German Society of Physicians at Berlin I attended pretty regularly the section devoted to gynæcology.

The subject of the removal of the ovaries for the relief of

nervous disturbances in women was freely discussed at one of these meetings.

Hegar, Schrofyder, Veit, Sanger, Gusserow and others took part in the discussion and the sentiments expressed were generally of the most conservative character. The conclusion was general that the operation in the past had been too frequently performed; that healthy ovaries ought not to be removed, and that the operation was unjustifiable in cases where the nervous phenomena produced little or no effect upon the general health of the patient. In fact the operation should be limited to those cases where life is in jeopardy.

December 18th, 1886. The first case before us to-day was a girl, 17 years of age, brought here from one of the provinces. Eight years ago her parents noticed a small tumor just beneath the right ear. It increased in size until at the present date it is seven inches long and four inches wide and firmly attached, and seemed to take its origin from the side of the cervical vertebra.

Pean remarked before beginning to operate that this was one of the most difficult operations in surgery, as the tumor involved some of the most important organs in the body. He says never attempt to enucleate a tumor like this situated in this position. Open it up from the surface and cut straight through the mass from above downward until the base is reached. This can be done without hesitation as one never finds important vessels or nerves in the body of the tumor itself. When the bottom of the mass is reached one may find it loose and easily detached. If it is firmly adherent to important tissues, cut it away piece-meal as far as possible, and leave the balance to slough away, which it will do after

being isolated from the surrounding parts. This formidable mass, however, he succeeded in removing entirely.

OPERATION FOR STONE.

Pean, like Bergmann and Guyon, performs the suprapubic section. Every teacher and operator I have seen in Europe discards the perineal section. Crushing small calculi and removing larger ones by the high operation seems to be almost a universal rule at the present time.

Professor Lannelogne in his lectures at the School of Medicine treated, for the first part of the session, of injuries and diseases of the head, spine and neck.

For injuries of the skull he still adheres mainly to the use of the trephine, claiming that when the operation is performed antiseptically it gives good results. On the other hand Bergmann has abandoned this instrument, and in a late number of Volkmann's Vorträge he takes occasion to discuss this subject in a most thorough manner, showing that by substituting the hammer and chisel, immensely better results are obtained.

In speaking of Pott's disease of the spine Professor Lannelogne says that the microscope has settled the question as to its tuberculous origin.

As to the plaster-of-Paris jacket of Sayre, he says that the idea of keeping the two diseased surfaces separated by this appliance is irrational and impracticable. He puts his patient in a horizontal position and keeps him there for months together, taking him in the open air as much as possible to preserve the general health. He says when one has a psoas abscess as the result of this disease never aspirate it. Open it up freely, curette carefully as much of the sac as one can, and then inject with iodoform in weak solution to cleanse the pus-

cavity. I have seen, by the way, a long-handled wooden spoon used for this purpose.

The Hôpital des Enfants Malades contains 600 beds. M. de Saint Germain is the surgeon-in-chief to this institution. In his rough manner of operating and dealing with the poor unfortunates who are under his charge he puts one in mind of the model surgeon of a century ago. He always chloroforms his patient himself. In doing this he pours about three drachms of chloroform on a towel, three or four double, claps it over the face of the child, and, despite its cries and struggles, allows it no air except what it can get through the meshes of this cloth. His patient is completely insensible in one minute. He claims this to be the safer mode of giving chlorform, as less of the drug is required to produce anæsthesia. His surgery, like his administration of chloroform, is rapid and rough. Chronic enlargement of the tonsils he treats with the thermo-cautery. He uses a small point which has a direction of a right angle to the main handle, and this he introduces at two points into the tumor. Usually two sittings cure the patient. In older children, where the tonsil has become much indurated, he incises the organ with the knife.

The tonsillitome he says is an instrument designed for a physician but not for a surgeon. In the treatment of large nævi, after injecting the center of the mass with the solution of iron, he destroys the small points that are generally left around the margin with the actual cautery. He has had, he says, two deaths occur in his practice from the injection of the iron solution, and since then practices great care in the use of a ring around the border of the mass which he presses down firmly during the operation and for a little time afterwards.

Phimosis he treats by dilating the prepuce instead of by circumcision.

For this operation he uses a pair of pointed forceps which he introdces as far as the meatus and then spreads it until he can pass the gland through the opening. The operation is followed by less irritation than circumcision and the results seem to be good.

He is not a friend of the Jewish idea of the superfluity of the foreskin; in fact, he says that when you cut it away you have in a manner deformed the patient and deprived him of a tissue which he believes to contribute to the perfect healthiness of this most important gland. W. S. CALDWELL.

PARIS, December 28th, 1886.

SOCIETY REPORTS.

THE CHICAGO SOCIETY OF OPHTHALMOLOGY AND OTOLOGY *met December 14th*, at the Tremont House. The President, E. L. HOLMES, M.D., in the chair.

Drs. Gardiner, Holmes and Colburn were appointed a committee on membership.

The following paper was read by LYMAN WARE, M.D.:

ON LUPUS VULGARIS.

History.—This is no new disease; but on account of its frequent occurrence, and, until the past few years, its almost incurability, I beg to call the attention of the society to a few cases which have come under my observation. Before referring to the history of these cases, or submitting to your examination two or three patients who have consented to appear before you, I would, in a few words, recall to your minds some notable features of this disease. There is no doubt

that it was generally recognized at least 5,000 years ago, and designated "Lupus." That it may have been confounded by ancient writers, in many cases, with carcinoma is highly probable. Willan was the first to apply the term lupus exclusively to certain forms of ulceration about the face, while Bateman made no actual distinction between the effects and course of carcinoma and lupus, except that he considered the latter curable by arsenic, the former not.

Symptomatology.—Lupus varies much in appearance, according to the age of the patient, constitution, state of health, kind of diet, and the part affected. At first it appears in the form of tubercles, either isolated or in groups, which may be deeply imbedded in the true skin, beneath it, or quite superficial, and always spreads by infecting the adjacent skin. It is never congenital, though it may appear early in life. Unchecked by treatment it increases more or less steadily for many years. At times the disease may appear checked for years, when it will again break out with renewed vigor. In old age the severity of the disease is often diminished. Lupoid tuburcles may terminate in involution, leaving the skin atrophied and glistening like a scar, or in disintegration and ulceration. It occurs upon any portion of the body, most frequently, by far, upon the face. The cases which have come under my observation originated on the lower eyelid, extending gradually to the eye and nose. Lupus of the ala nasi and the tip of the nose assumes the disseminate form. The tubercles are prominent, and coalescing form large, irregular protuberances. Lupus on the lower lid produces first complete ectropion, in consequence of cicatricial contraction of the skin, then gradually extends to the palpebral conjunctiva, the ocular

and deeper tissues of the eye, involving, at last, the entire orbit. As the disease involves the conjunctiva it imparts to it a dark, reddish-brown color, and is decidedly trachomatous in appearance. Later, it becomes smooth, glistening and atrophied.

Etiology.—Many theories have been advanced respecting the cause of lupus. Both ancient and modern writers refer it to scrofula or syphilis. Although the terms scrofula and scrofulous have been used for ages, by physicians as well as laymen, throughout the entire world, it must be confessed we have no very clear idea as to what scrofula is, or to what exact condition scrofulous should be applied. In my younger days I was taught that scrofula, being a literal translation of the Latin scrofa, swine, was a disease common, to those who eat pork. I have since thought that such an explanation was unfounded, and that the term "scrofula" originated in the fact that the sub-maxillary furrow, which does not exist in well-fed swine, was obliterated by glandular enlargement. Some who hesitate to use the word scrofula, designate exactly the same condition by the term "struma," or "strumous diathesis."

Although we may not be able to define clearly the term "scrofula," or "struma," yet in a case of indolent swelling of the lymphatic glands, large lips, flabby, soft muscles, with a feeble constitution, and where the slightest irritation produced chronic inflammation, followed by suppuration, we would not hesitate to designate such a condition a scrofulous or strumous. In most of the cases that came under my observation such a condition was not present, nor was there any history of syphilis. Some writers, though not considering lupus a syphilitic disease, think it shows a syphilitic

taint; yet I was not able to discover a single symptom that pointed toward hereditary syphilis. The patients generally were in excellent health, appetite and digestion good. The more I compare the two diseases the less resemblance I find. Lupus is an exceedingly chronic, indolent disease, arising from small tubercles imbedded in the substance of the skin, does not become rapidly worse, may persist for years without producing constitutional disturbance, and is wholly unaffected by anti-syphilitic treatment. It is also essentially a disease of early life, seldom making its appearance before the third year, and hardly ever after the twentieth or twenty-fifth. When it appears later it will generally be found to be a recurrence, and not a primary attack. The treatment of lupus rather indicates that it may be allied to the malignant diseases, a connecting link, as it were, between the non-malignant and malignant.

Volkmann has recently laid great stress upon the fact that every portion of the diseased tissue should be most thoroughly eradicated by the scoop; and the same thing has been taught and attempted for many years by means of the knife, the caustic, or the galvano-cautery. It has long been insisted that whatever method be adopted, it must be thoroughly and unflinchingly carried out, and repeated from time to time, if necessary, according to the exigencies of the case, or its tendency to relapse. Most authors have considered it necessary to treat the disease locally—some by constitutional remedies only. In the cases reported I have tried each method separately, then unitedly, and I have no hesitancy in saying that when the local treatment was combined with proper internal medication, the advance toward recovery was much more rapid and more satisfactory than when one

method only was followed. The internal treatment consisted principally of tonics, as quinia, iron, strychnia, phosphates, and particularly arsenic, either in the form of arsenious acid or Fowler's solution, and special attention to a plain, nutritious diet, and out-door life. The local treatment consisted in the complete destruction of the existing lupoid tubercles, in whatever state of development, by means first of the scoop or Valkmann's curette, then by a thorough and prolonged application of pyrogallic acid in crystals. In some cases, after removing the superficial layer, consisting of morbid products, scales, secretions, etc., a pledget of absorbent cotton was saturated in a 4 per centum solution of cocaine, and firmly held on the diseased tissue. In other cases, where the lupoid tubercles were deeply imbedded, or where the disease was at all extensive, general anæsthesia was first induced. The patients never complained so much of the acid application as of the cutting or scooping out of the lupoid mass. The pyrogallic acid uniting with the blood and lupoid tubercles produces a thick, brownish, syrupy substance, and as long as this is produced the acid should be applied. Jarisch, of Vienna, was the first to call the attention of the medical profession to the local use of pyrogallic acid, though it had long been used in the arts, particularly in photography. Dr. A. Vesey (Dublin Jour. Med. Sci. 1878), nine or ten years since, observing its remarkable astringent effect on the hands of those engaged in photography, was led to employ it in internal hemorrhage, and especially in the hæmoptysis of phthisis, in which he found it very efficient, in grain doses, frequently repeated (every hour or oftener). Jarisch first used it in the form of a ten-per-centum ointment, with vasaline. Besnier,

of Paris, makes use of a saturated solution of the acid in ether; applies it with a camel's-hair pencil to the diseased portion, and at once covers this with a layer of traumaticine. These applications are repeated until the disease is thoroughly eradicated.

Schwimmer, of Budapest, after destroying the lupoid tubercles, by means of the ten-per-centum ointment already mentioned, prevents a return of tubercles in the cicatrix, which is of frequent occurrence, by the application of mercurial plaster. In some few cases where pyrogallic acid has been used extensively, and long continued, poisoning has resulted; but where its use is restricted to the removal, either of lupus or epithelioma, it is not at all likely to be complicated by any such unpleasant results. In cases of poisoning the kidneys are first affected, prostration and febrile disturbances appear, the urine becomes brownish or olive green in consequence of hæmoglobinuria, the skin tinged with green, and a glairy mucus is vomited. Dr. Charles W. Allen, of New York, has reported a number of cases of lupus treated by pyrogallic acid, and has expressed himself as much pleased with its effect. He made use of both the powder and ointments of varying strength, made with vasealine. He considers the acid of great value, because it specially attacks the lupoid tubercles, induces destructive ulceration in and about them, leaving the healthy tissue unchanged. In any preparation of pyrogallic acid care must be exercised not to combine it with an alkali, which would neutralize it, nor with a metal, which it would reduce. Six cases have been treated, but in case No. 1 iodoform, in powder, was used instead of pyrogallic acid.

Jas. M., æt. 45 years, was first attacked twenty years

since, while in the U. S. army. The disease made its appearance at the inner canthus of the right eye. He attributed it to an injury received while riding under a tree, and being struck by an overhanging limb. The disease gradually extended to the under eyelid, involved a portion of the upper, encroached upon the cheek, and finally the deeper tissues of the eye itself. The patient was given ether, and the diseased mass thoroughly removed by means of the curette, and the wound dressed with powdered iodoform. Two weeks subsequently a few lupoid tubercles again made their appearance at the inner canthus, but were easily removed by the curette without anæsthesia. The patient made a rapid recovery, and remained under observation about six months, and no relapse occurred. He assured me, on leaving, that should there be a return of the disease he would let me know. He was placed, from the first, upon Fowler's solution of arsenic, and advised to continue its use, for at least six months. The photographs which I show give a good idea of the appearance of the case before and after treatment.

CASE II. F. W., æt. 50, residence 44 Desplaines street, Chicago, stonecutter. Twenty years since a small tubercle, about the size of a pea, made its appearance upon the left ala nasi. It slowly increased, until it attained the size of a large bean, ulcerating and extending at its edges. A few years later lupoid tubercles appeared at the inner canthus of the left eye, and gradually extended to the lower lid. Mr. W. had submitted to a great variety of treatment, which had only partially kept the disease in check. When he came under observation the protuberance on the ala nasi was, at least, the size of a large lima bean, dark red, and ulcerated

at the edges. The ulceration at the inner canthus occupied an irregular space, about the size of a 10-cent piece. Although there was at least an inch of perfectly healthy skin and tissue intervening between the two, the patient was confident there was some connection between them. When the ulcer of the nose was red and painful, that of the eye was also worse. As the patient had considerable fortitude the lupoid tubercles of both nose and eye were thoroughly curetted, without the aid of ether, and the pyrogallic acid applied until the brownish, syrupy substance ceased to form. The history of this case differed somewhat from the others, in this respect: that for years there had been more or less pain. In fact, of late the pain had been so great that it was impossible for him to work at his trade, or sleep, sometimes for several nights in succession. The operation relieved him completely of the pain, and he was able to sleep, and returned at once to his work. Several operations have been necessary, but he has been able to sleep regularly and work constantly, and at the present time appears to be completely cured.

CASE III.—Minnie, æt. 16. The lupoid ulceration first began when she was twelve years of age, unaccompanied by any pain. When she first came under treatment the entire upper and lower lids, and about one-third of the adjacent cheek, were involved. Ether was administered, the entire ulcerated surface was curetted, and the acid applied. This case, being at the Illinois Charitable Eye and Ear Infirmary, and my term of service about expiring, came under the charge of my colleague, Dr. Gardiner, who continued the same course of treatment. After remaining a month or two in the institution, and no indication of the disease reappearing, she was allowed to return to her home. Six months have now elapsed, and there

has been no return of the disease; but as there is slight ectropium of the lower lid, in consequence of the deep ulceration, a plastic operation will be necessary to restore it to its normal condition. In all cases of lupus about the eye I have considered it prudent to protect the cornea from the action of the acid by means of a thick layer of absorbent cotton. I have now used the pyrogallic acid in five cases, and in three or four very extensively and freely, yet in no case have I seen any symptoms which would indicate poisoning.

THE SUBJOINED REPORT OF A CASE OF "RECURRENT HEMORRHAGE INTO THE ANTERIOR CHAMBER," WAS READ BY BOERNE BETTMAN, M.D.

Cases of concussion of the eyeball, with subsequent hemorrhage into the anterior chamber, are not uncommon. Such occurrences are frequently noted down in our journals, and are alluded to in our text-books as uninteresting matter of fact. The case I wish to bring to the society's notice to night differs so much from the ordinary ones that its presentation need not be prefaced with an excuse.

On the 19th of May, 1886, Mr. and Mrs. W. hurriedly entered my office with their little daughter Ettie, aged four. They informed me that the child, whilst playing "Indians" with her comrades, was struck in the left eye, by a projectile propelled from a toy gun in the hands of a boy. The projectile was a twig of a tree. The end was apparently smooth, to judge from the appearance of the contused lid. The stick could not be found. The propelling force was a broad band of rubber, kept tense by a wooden trigger. The gun was within a few feet of the child when the accident occurred, three-quarters of an hour before I saw the patient. On examination I found the following condition: The upper right lid was œdematous and

reddened. On lifting the latter, the eye was found bathed in tears, and the conjunctiva slightly injected; cornea normal. The whole anterior chamber was filled with blood. In the lower part it formed a large clot, hiding the iris from view. The pupil was dilated and elongated in the vertical diameter. An ophthalmoscopic examination could not be made. The child was unable to count fingers close to the eye. I ordered cold compresses and instillation of two drops, every few hours, of a one-per-centum solution of atropine. When I again saw the child, about three hours later, the pupil was dilated ad maximum, and the greater part of the hemorrhage was absorbed. Fingers were readily counted. On the morning of the 20th but a small clot of blood remained, in the lower part of the anterior chamber. At the next visit, May 21, I learned from the mother that the patient had passed a very restless night, occasioned by spells of sudden, intense pain. The first attack occurred in the evening. During a momentary absence of the parent the child left its bed and ran to the window, which it opened. Hearing its mother return it hastily essayed to regain its bed, but stumbled and fell heavily to the floor. The fall was followed by severe pain in the injured eye. A second attack took place at midnight, and a third early in the morning. I found the eye in a glaucomatous state. Tension 11, very marked ciliary injection, anterior chamber full of blood. The eye was rebandaged, and cold applications applied over the roller. A one-per-centum solution of eserine was prescribed, two drops to be instilled into the eye five times a day. The child was kept quiet in bed. In the evening I found a great improvement. Tension reduced, but still higher than normal. Hemorrhage mostly absorbed. At midnight the child was again awakened by the excruciating pain in the left eye. The morning showed a return of yesterday's condition:

extensive hemorrhage and increased tension. These sudden attacks of severe pain came on without any apparent restlessness on the part of the child. Whilst in the midst of a sound sleep it would be suddenly awakened by the darting pains. hesitated to reinstill the eserine, thinking that the action of the drug favored a separation of the partly healed iris, which I supposed had been lacerated at the lower border, covered by the blood-clot. The child had been kept quiet in bed. Both eyes were bandaged, for a time; the right one constantly. Coffee and other stimulants were forbidden. In fact, everything had been done to favor a rapid union of the parts. I decided to try the effects of ergot, and ordered the fluid extract to be given, in twelve-drop doses every three hours, in order to reduce the action of the heart, and permit a sufficiently firm organization of the blood-clots in the lacerated blood-vessels. The introduction of this remedy was soon followed by good effects. The blood disappeared entirely. The pupil remained for a time elongated, but later on resumed its normal shape.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, December 17th, 1886.

I.—Presentation of Specimens.

II.—ETHERIDGE. *A Case of Anterior Vaginal Enterocele.*

III.—SÄNGER. *Ætiology, Pathology, and Classification of Salpingitis.*

IV.—WESTON. *Metritis.*

The PRESIDENT, CHARLES WARRINGTON EARLE, M.D., in the Chair.

I. PRESENTATION OF SPECIMENS.

DR. HENRY T. BYFORD exhibited the following specimens:

1. PROLIFERATING OVARIAN CYSTOMA.

This specimen, removed three weeks ago by Dr. William H. Byford, at the Woman's Hospital, is interesting in being a large ovarian

cystoma, composed of an immense number of small cysts. Extremely formidable in appearance—resembling a malignant growth—it has pursued an exceedingly benign course. Adhesions were few and easily severed. The subsequent recovery was typical, one dose of morphine constituting the entire medication.

2. PAROVARIAN CYST AND APPENDAGES, COMPLICATED BY A UTERINE FIBROID.

This cyst, which was about the size of the head of a child two years old, developed between the layers of the broad ligament in a direction away from the uterus, lifting up the Fallopian tube, ovary and infundibulo-pelvic ligament. The tube is straightened and hypertrophied, admitting the finger for an inch into the fimbriated extremity, and the infundibulo-pelvic ligament is separated from its ordinary pelvic wall attachment by a larger portion of the tumor, over and under which the peritoneum passes to form, with the ovarian ligament and uterine end of the Fallopian tube, the pedicle. Had there been no pedicle, or had it been desirable to leave the ovaries, the inner coating of the cyst could have been taken out of the serous investment in about two minutes, without violence or hemorrhage. You will observe that I separate them now almost as easily as if they were wet pieces of linen lying in apposition. The ovary is slightly hypertrophied. On account of the presence of a uterine fibroid tumor, the size of an orange, the other healthy ovary and tube were removed. Three transparent cysts, about the size of beans, and feeling as hard as bone or wood are, as you see, hanging by long pedicles from the meso-salpinx. The ovarian artery runs over the tumor and under the tube, is elongated and four or five times its normal thickness. Here is also the left tube. It is congested, but neither it nor the artery is appreciably enlarged. The ovary is large but not pathological.

3. OVARIAN CYST IN THE BROAD LIGAMENT CONTAINING THE DEGENERATED OVARY.

This tumor, which I removed by enucleation and which was the size of a pregnant uterus in the sixth month, is interesting by comparison with the other, and also as illustrating the dangers of tapping. It evidently developed from the surface of the ovary between the layers of the broad ligament towards the uterus. The remainder of the ovary has developed into a multilocular cystoma the size and shape of a large orange, and projects into the large cyst. The firmness

of the adhesions of this inner coat of the tumor to its peritoneal covering, as compared with the smaller cyst just shown, suggests that small tumors are more easily enucleated than large ones, and constitutes an argument in favor of earlier operations. The horn of the uterus with the Fallopian tube was hypertrophied and drawn up over the anterior surface of the tumor, so that when exposed during the operation it looked like a pregnant uterus with a large vein running over it, diagonally across the incision. Had the tumor been tapped in the ordinary place, trouble must have resulted, and the operation which, after the stripping off of this hypertrophied and congested uterine tissue from the tumor, was easily and rapidly completed, would have been complicated. The uterus in a few weeks was apparently normal in size, position and mobility. It is interesting to note that the tumor was mistaken for advanced pregnancy, about a year ago, by one of our most prominent general practitioners.

4. SUPPURATING OVARIAN ADENOMA, WITH UTERUS.—AUTOPSY.

This tumor, which was examined for me by Dr. F. S. Johnson, is an ovarian adenoma of the same histological nature as the first specimen shown, but presents a striking contrast by malignant course and small size, as the whole was scarcely larger than a child's head. An ovarian tumor was removed from the opposite side by Dr. William H. Byford several years ago. As this was not a malignant growth, although practically pursuing the course of one, an attempt was also made by him to remove this, or at least cure the discharging abscess that surrounded it, about five months before the patient's death, but it was, from the nature of the case, only partially successful. In attempting its removal after death, I was almost equally unsuccessful, for it was surrounded and intermingled with pus cavities and intestinal loops, and had destroyed and occupied the place of all the pelvic tissues except the rectum, bladder and uterus with the right round ligament which you see hanging to it. The cul-de-sac was full of it, the posterior uterine surface inseparable from it, the right broad ligament supplanted by it, and the contents of the left broad ligament an agglomerated mass of inflammatory tissue. A blue walled abscess about the size of, and extending along the course of, the ascending colon, had secured an outlet just below the border of the ribs. Another abscess opening just below and to the

right of the umbilicus gave exit to pus. feces and a semi-transparent, jelly-like ovarian fluid. The right ureter was dilated and hypertrophied. The pelvis of the kidney must also have been dilated, although that being left to be examined last,* was finally forgotten. The lower three feet of the ileum were compressed and atrophied to the size of a small lead pencil. Just above it ran a fibrous tube of the usual size of the ileum, straight from the cæcum to the lower opening in the skin. The uterus, which previous to the removal of the first tumor, had developed two healthy children, was of rather small size, in a normal position and healthy, excepting a moderate laceration of the cervix and a slight degree of injection of the mucous membrane about the os.

5. FIBRO-SARCOMA OF THE LEFT HORN OF THE UTERUS, LUNGS, PLEURA, PERICARDIUM, RECTUM, TRANSVERSE AND DESCENDING COLON AND ABDOMINAL PARIETES.

About a quart of serum was found in the right pleural cavity. Several round, fibro-sarcomatous tumors, the size of nuts, and several indefinite spots of contracted fibrous tissue, were found in the lungs, suspending their expansibility except over a few small areas. The two which I hold in my hand were torn from the lungs; one from the center of the apex and the other from the pleura at the base. A fibro-sarcoma the size of a goose's egg which is, as you see, still attached to the left pleura, was also attached to the pericardium. The heart weighed 8¾ ounces, was drawn to the left by the contracted lung (which had but little fluid about it) and contained an ante-mortem clot. The liver was enlarged and mottled. The stomach lay entirely to the left side, in front of the compressed and atrophied spleen, with the pyloric orifice suspended vertically under the cardiac orifice, and not reaching as far to the right as to the median line. The transverse and descending meso-colon was strung with these fibro-sarcomatous masses, the size of hazel nuts, and the rectum covered with the same of a little larger size. A few were also found on the peritoneal surface of the abdominal parietes. The uterine tumor weighed twenty ounces, and, like all of the specimens, cannot be distinguished from fibroid or fibrous tumors by the eye, except over a limited area upon the anterior surface, where it has softened and degenerated into the round celled variety. The

* The autopsy was performed in the midnight before the burial, and in a small town, in a cold room and without conveniences.

fact that the patient was twice tapped by physicians for ovarian cystoma makes it seem probable to me that this change has been produced by the introduction of the trocar, and that the little tumors on the abdominal parietes were due to the adhesions forming afterwards. The fluid obtained then was probably peritoneal which, to the amount of about eight pints, had again accumulated. It was dark green in color. Abdominal enlargement was noticed several years ago. An operation had been advised two years ago. Dr. F. S. Johnson examined the specimens, with the result mentioned, and but for an attack of sickness would have reported upon them in person.

DR. W. W. JAGGARD exhibited the following specimens:

1. UNILOCULAR CYST OF RIGHT OVARY, THE REMAINING OVARIAN TISSUE SHOWING CORPUS LUTEUM OF MENSTRUATION.

He had recently removed the tumor, and the patient had made an excellent recovery. Menstruation ceased three days before the operation. The specimen was interesting, though not exceptional, in showing the persistence of functional activity in such an extensively diseased organ. The left ovary was normal, and was not removed.

2. A PLACENTA, SHOWING VELAMENTOUS INSERTION OF THE UMBILICAL CORD, AND REMAINS OF AN EXTENSIVE HÆMORRHAGE INTO THE PARENCHYMA OF THE ORGAN.

The term *insertio velamentosa* means a separation of the three vessels of the cord before they reach the placenta. The vessels pursue a straggling course between chorion and amnion, for a variable distance, and each one reaches the placental margin by itself.

According to B. Schultze (*Jenaische Z. f. med. u Naturw*, 1867 Heft. 2 and 3) the origin of velamentous insertion of the umbilical cord is as follows: The allantois carries the fœtal vessels to the periphery of the egg, entirely irrespective of the future placental site. Indeed, it is comparatively seldom that the future placental site is immediately reached. The vessels penetrate all the chorionic villi indiscriminately. These vessels are subsequently obliterated in the chorionic villi, not destined to form the placenta, and vascular connection only remains with that portion of the chorionic villi, corresponding to the *decidua serotina*. With the further growth of the egg, under normal conditions,—it makes no difference

what point in the egg periphery the allantois originally touched,—as the amniotic sheath forms around the rudimentary cord, the fœtus performs a movement of rotation, so that the vessels pursue a straight course to the placenta. Now this movement of rotation may be hindered, and the formation of a complete sheath prevented by anomalous adhesions. The hindrance is adhesions of the umbilical vesicle, the ductus, or the vessels to the amnion or chorion. In such cases, if the growth of the ductus does not keep equal pace with that of the amnion, a complete sheath cannot be formed, and the amnions forsake the vessels before they reach the placental edge. Velamentous insertion of the cord can occur at the pole of the egg opposite to the placenta or at any intermediate point. The anomaly is observed most frequently in cases of multiple pregnancy.

Velamentous insertion of the umbilical cord seldom leads directly to interference with the development of the fœtus. In labor, however, the vessels may be compressed between the presenting part and the parturient passage, and the child may be asphyxiated, or, with the rupture of the bag of waters, a vessel may be torn and the child's life endangered by loss of blood. In general terms, the clinical picture bears a great resemblance to *placenta prævia*.

In the specimen presented, the cord is inserted into the chorion about five centimeters from the placental edge. The anomaly was not recognized until near the conclusion of the first stage of labor. A large vessel was torn at the same time with the spontaneous rupture of the bag of waters, and the life of the child was seriously jeopardized by the loss of blood.

The child, though probably mature in point of age, was small and feeble; weight, 2,700 grams, length 47 centimeters. The failure in development could be ascribed to the large hæmatoma and numerous hæmorrhagic infarctions in the *placenta fœtalis*. The mother of the child was threatened with abortion, and suffered from uterine hæmorrhage when she was in the sixth month of pregnancy. The child, at the time of presentation of specimen, was living.

THE PRESIDENT exhibited the ileum, removed from a child 22 months old, who died of typhoid fever, in which the characteristic lesions of the disease could be seen.

The child had continued fever for five weeks, the temperature reaching 105° F. part of the time, rose-colored spots in the third week, intestinal hæmorrhage, tympanites, and delirium.

The case is remarkable on account of the age of the patient, as many authorities deny the existence of genuine typhoid in children.

Stewart (1841) describes infantile remittent fever in which the bowels are sometimes relaxed, occasional delirium, followed by a low, quiet state. Evidently he did not recognize typhoid as occurring in children.

Condie (1853) says, "It is much more than probable that typhoid will be found to be a much more frequent disease among children than has heretofore been supposed."

Bedford (1856) does not speak of typhoid.

Hillier (1868) says, "Typhoid is not infrequent in children. Many cases of infantile and gastric fever belong to this class."

Meigs and Pepper (1870) say, "Typhoid fever has been observed during the first year of life, but is rare under the age of two years. It is comparatively infrequent between the ages of three and eight years, and attains its maximum of frequency in childhood between the ages of eight and eleven years."

Tanner (1871) believes that all those varieties of typhoid which have hitherto been described under the names of simple, continued and remittent fever are but different degrees of one and the same disease, typhoid.

Eustace Smith (1884) says, "Enteric fever is common in children."

Steiner (1871) says of typhoid, "This is common among children. In the Prague Hospital, out of 80,245 patients, 1,180 had typhoid."

Vogel (1870) says, "Abdominal typhus is much more frequent than is commonly supposed."

I think J. Lewis Smith did not mention typhoid in his first edition, but in his sixth (1886) he describes it fully, believing that it is not infrequent in children and presents peculiarities not found in adults, hence his chapter of eleven pages.

From the above quotations it seems that foreign authors recognize it as moderately frequent and writers in this country who, a quarter of a century ago, either did not speak of the disease as occurring among children or gave the subject very slight mention, are now describing it as more common, even among quite young children.

In all probability, as our malarial diseases become rare, typhoid fever increases in frequency.

II.—DR. J. H. ETHERIDGE made the following remarks upon

A CASE OF ANTERIOR VAGINAL ENTEROCELE

with exhibition of patient.

I have a rare case that I would like to exhibit to the Society, one of anterior vaginal enterocele. I have had a few of my medical friends examine it, and they all concur in saying that they have never seen a case like it. The patient is 19 or 20 years of age and has one child, 11 months old. When she was about six months gone in pregnancy, she "jumped the rope" one day and after that felt something come down through the vagina. She went to full term and had a normal labor. Whenever she strains or lifts, the enterocele comes down, presses the vulva apart and comes out between the thighs. On examination I find quite a large opening in the roof of the vagina. The edges of the ring can be very easily outlined with the finger, and when the hernia is down the finger in the vagina is at once attracted by a pendant mass, and by pressing it a little one can determine that it is filled with gas. The opening comes down to the left of the uterus, anterior to the broad ligament posterior and to the left of the bladder.

A Fowler pessary has been fitted which seems to answer the purpose of complete retention, and as long as the patient can avoid an operation my advice is not to have one. The uterus is in good position. She made a good recovery from her confinement and is nursing her child, and seems to be in a perfectly physiological condition. The question of operative procedure for a radical cure is a very serious one for this patient. Laparotomy is full of difficulty in attempting to close the hernial opening from within, is of a most unsatisfactory possibility in its outcome, and is followed by the very great risk to life which attends all laparotomies. Any operation through the vaginal tract will be attended by such a lack of certainty in results as to cause me to hesitate in essaying it. Until it is found impossible to retain the intestine in its proper place with a pessary, I have advised the patient to avoid submitting to any surgical proceedure. The patient is present, and each gentleman desiring to do so can make the examination and verify what I have said.

DR. PHILIP ADOLPHUS: The case just presented for examination by Dr. Etheridge is a typical case of vaginal hernia, the intestine passing between the loosely attached connective tissue which unites

the bladder and anterior wall of the vagina, in its upper half. This mode of descent is much more infrequent than a hernia into the *cul-de-sac* of Douglas. In the case here presented the hernia is reducible in the upright position, contains intestine only, and has for its covering the peritoneum and vaginal wall. What can be done for this patient's relief? These herniæ seldom become strangulated. During labor, however, besides being an obstacle to prompt delivery, they are liable to contusion and strangulation. No retentive apparatus is worthy of trial, for all distend the vagina and ultimately increase the evil. What surgical procedure should be attempted? The text-books to which I have access do not suggest anything. Is the hernia to be closed by way of abdominal section or *per vaginam*? I think the closure *per vaginam* is preferable, and I suggest the following procedure adapted from Stoltz's operation for cystocele: "The patient being placed in Simon's position with the perineum retracted, the hernia is to be reduced and kept in place by means of armed probangs. An incision to be made over the tumor, the tissues divided until the ring of the hernia is exposed. This ring is to be surrounded by a running ligature of very heavy cat-gut, and then closely approximated, tied, and the ends cut off short, or, if thought preferable, interrupted cat-gut sutures may be introduced to effect the same purpose. This completes the first step of the operation. Then remove a piece of the vagina larger than the protruded tumor, over the region of the hernia. The wound may be closed by running a circular single ligature of carbolized silk in and out, about an eighth of an inch from the margin of the wound, all around it, the end of the ligature being brought out close to the place where it was first inserted. The two ends are then drawn tight and tied, leaving a puckered opening into which a little drainage tube may be inserted. During the introduction and the tightening of the ligature the intestine may be held back by armed probangs. It is easier to work in this region with the scissors than the knife. Great care should be practiced in operating in this neighborhood not to wound the uterus and the peritoneum, which can be avoided by elevating the mucous membrane as it is removed.

Now a few words in regard to the abdominal section for reducible vaginal enterocele. After having opened the abdominal cavity and withdrawn the prolapsed portion of the intestine, will it be easier to

close the hernial aperture than *per vaginam*? I think not. The peritoneum and cellular tissue beneath it (abundantly supplied with lymphatics and blood-vessels, the parametric tissue of Virchow and Spiegelberg) will have to be incised, the bladder and upper portion of the vagina separated, the redundant tissue of the anterior wall of the vagina drawn up and excised, then stitched aud replaced; the peritoneum also closed below as well as externally in the abdominal parietes. Will this render the site of the hernial protrusion stronger? Will it be a safer and more efficient operation than the first? I think not.

DR. H. T. BYFORD: Dr. Etheridge has shown us one of those rare and interesting cases of anterior vaginal enterocele. The protrusion is through the parametrium in front and to the right of the cervix, the entire uterus being pushed backward, and the bladder forward. The left ureter can be felt passing from the trigone in front of the tumor downward and to the left of it. The broad ligament is pushed backward, and the round ligament outward toward her left side. The parts to the left of the median line seem only slightly to participate in the general displacement. The remedy for this condition, of course, must be to get the displaced organs and tissues back into the place now occupied by the intestine. I think Dr. Etheridge was wise in rejecting abdominal section as a remedy, for no advantage could be derived from it that would compensate for the risk involved. An operation from the vagina that would be justifiably performed upon a girl of her age could not be expected to be permanently successful, as the parts could not be properly replaced, and vaginal support could only be given. The treatment by pessary, already adopted in this case, is better than either of these procedures, because it acts partly by replacing the organs, especially the uterus, and partly by providing a barrier to the descent of the enterocele. Its weakness is that it does not tend to strengthen the parts upon it, and that it weakens those under it. The most efficient and rational method of permanently replacing the parts, and thus curing the enterocele would be to perform Alexander's operation of shortening the round ligaments. This would draw the fundus forward over the bladder and thus replace the normal central barrier to the descent of the intestines. It would also draw the round ligament and upper portion of the broad ligament forward to form a lateral support to them. By turning back the base of the broad ligament it would tend to draw

back into position the ureter (which is in close relation with its posterior edge), and at the same time the connective tissue through which the ureter runs and which is displaced forward with it. I know of no other method in which the parts could be brought back so nearly to their former relations. A pessary could now be worn until the parts had contracted and regained tonicity. If then the anterior vaginal wall remained redundant a circular piece should be excised in front of the cervix and by a stitch passed around it drawn together, along with the parametric tissue immediately above it.

DR. ETHERIDGE: If Alexander's operation was satisfactorily performed, what would be the effect upon the bladder and upon subsequent pregnancy?

DR. BYFORD: After the operation the fundus is not, or should not be, held down upon the bladder as firmly as in some cases of anteflexion, in which there are no bladder symptoms of any account. I have performed three operations. In one case the bladder symptoms were benefited, in the others there were none complained of, either before or afterward. As to pregnancy, already there is some experience to show that it does not interfere. The round ligaments are not elongated in pregnancy as much as would be supposed, since the uterus grows to a certain extent away from them. In many cases of anteflexion or anteversion the ligaments are shorter than after an Alexander operation, yet give rise to no serious trouble in pregnancy.

DR. ADOLPHUS: How could Alexander's operation be of benefit if it draws the fundus down and the cervix up, since the enterocele is between the bladder and the cervix?

DR. BYFORD: It draws the body of the uterus down under the intestines, displacing them upward. The cervix needs to be held upward and backward in order to secure a proper relation of parts.

III.—ÆTIOLOGY, PATHOLOGY AND CLASSIFICATION OF SALPINGITIS.

The Secretary, Dr. Edward Warren Sawyer, read the following communication from Dr. M. Sänger, of Leipsic, in reply to a letter by Mr. Lawson Tait, read before the Society, May 28th, 1886.

Dr. Sänger's letter was translated by Dr. Ivo Bernauer, of the Cook County Hospital, and revised by Dr. Christian Fenger.

LEIPSIC, October 10th, 1886, Lindenstrasse 16.

TO DANIEL T. NELSON, M.D., PRESIDENT OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

Dear Sir: I have been personally attacked by Mr. Lawson Tait in a letter addressed to you; as I desire that my reply should go by the same way, I take the liberty of requesting you to bring my letter to the notice of your Society and to have it assigned a place in the Transactions of the same. Nobody will dispute that up to the present time Mr. Lawson Tait, of all laparotomists, has had the best results, at all events in regard to ovariotomy and salpingo-oöphorectomy. His practical results have, however, raised his conceit to so high a degree that in pathological questions also he assumes a certain infallibility, which vents itself in numerous sallies and attacks upon others. The consequence of this is that just at present, Mr. Lawson Tait is being subjected to various energetic criticisms as by Bigelow, Schröder and others..

Now Mr. Lawson Tait has also shot one of his shafts at me. I feel very thankful toward Dr. Christian Fenger for having received it on my account. However I do not wish to allow the matter to rest there.

At the sessions of the Gynæcological Society of Chicago, held in February and March, the treatment of pelvic abscess by laparotomy was discussed in a highly instructive manner. Dr. Fenger in his excellent and exhaustive remarks said that "my statements regarding ætiology were the most complete" inasmuch as there must necessarily be as many forms of pelvic abscess as there are forms of disease of the Fallopian tubes. The latter were enumerated by Dr. Fenger according to the classification given by me in a paper read at the *Versammlung Deutscher Naturforscher* in Magdeburg. (See report, Archiv. f. Gynæk. Bd. XXV, pp. 126–33.) In this classification six different forms are recognized, and it is this distinction which Lawson Tait is pleased to style "absurd." Although Dr. Fenger reiterated his statement "that he regarded my classification as correct and complete and in accordance with the laws governing inflammatory processes in all organs of the body," yet I do not think that this defense of my position is sufficient. Considering the great influence Lawson Tait exercises upon the profession, I deem it my duty to refute him in every particular. I shall attempt to do so in a scientific manner, and I may thus hope that my reply will prove of general use and interest.

The pathological anatomy and the course of salpingitis can be understood only when we bear in mind the theories of infection. The whole sexual tract, from the ring of the hymen to the *ostium tubæ abdominale*, is open to the entrance of the external air and the germs suspended in it. Carriers of infection coming from the abdominal cavity and its contained organs may also enter at the *ostium tubæ abdominale*. Even microbes originally lodged in the external parts, in the vagina around the cervix, may, by way of the lymphatics, reach the peritoneal cavity, and thence gain entrance into the tubes.

The normal vaginal and uterine secretions at the age of puberty and the menstrual blood contain numerous non-pathogenous micro-organisms. Still greater numbers are found in the catarrhal secretions of the uterus in cases of endometritis as was demonstrated by Küstner. As to the normal tubal secretion and the tubal secretion in cases of *salpingitis catarrhalis*, consequent upon *endometritis catarrhalis*, no investigations have as yet been made to show whether or not they, likewise, contain non-pathogenous microbes. However, as the secretion of an endometritis contains microbes we may assume that if the inflammation is continued into the tubes, its secretion will here likewise contain the same. It has been clearly proven that pathogenous micro-organisms pass from the external parts to the tubes and the peritoneal cavity a fact which is doubted by no one, perhaps, except by Lawson Tait. These organisms have in part been accurately studied and it is well known that different kinds produce distinct forms of salpingitis, and secondarily pelveo-peritonitis. The fact was already established by Gurein and Guerrier, that in making vaginal and intra-uterine injections air, and thus, also micro-organisms, might pass into the tubes (Physo-Salpinx). S. Hennig, in his book "*Krankheiten der Eileiter*," p. 52, surmises that, in cases of putrid endometritis and physometra, gases may escape from the tubes into the peritoneal cavity.

Our present knowledge of the above mentioned pathogenous micro-organisms will enable us to divide them into three groups:

GROUP I.—FORMS OF SALPINGITIS PRODUCED BY KNOWN SPECIFIC MICROBES.

1. *Salpingitis gonorrhœica*, produced by the gonococcus of Neisser.

2. *Salpingitis tuberculosa*, produced by the *bacillus tuberculosis* of Koch.

3. *Salpingitis actinomycotica*, produced by the *actinomyces bovis* of Bollinger.

1. *Salpingitis gonorrhœica* is the only specific, infectious form of salpingitis which is recognized as such by Lawson Tait, although he stops short of admitting that the gonococcus is the exciting agent. Without doubt the gonorrhœal is the form most frequently met with. This fact was clinically established as early as 1872 by Nöggerath, long before Neisser had discovered his gonococci or Lawson Tait had performed his first operations "for suppuration of the uterine appendages." In Germany, I myself was one of the first gynæcologists who at our meetings showed the frequency of gonorrhœal salpingitis, emphasized its causal connection with pelveoperitonitis, and removed by operation the gravely implicated uterine adnexa. (Magdeburg, 1884, and Munich, 1886.) Gonorrhœal salpingitis is never followed by a destructive "suppuration" of the uterine appendages: it remains invariably a disease of the surfaces of the mucous and serous membranes. The pus formed by the specifically diseased mucous membrane gradually distends the tube; in one class of cases in which there is a great accumulation of free pus the tube is transformed into a large sac with thin walls; in another in which the wall of the tube, especially its muscular tissue, is hypertrophied to a greater extent, the tube becomes much thickened and rigid. In most cases, both conditions are found, the uterine portion of the tube is thickened, the abdominal end dilated. The serous surfaces of the tubes, the albuginea of the ovaries, the serosa of the peritoneum are attacked or become pus secreting surfaces only in cases in which gonorrhœal pus has escaped from the tubes and thus infected the above named structures. We may then have perisalpingitis, peri-oöphoritis, peri-metritis, s. *pelveo-peritonitis purulenta gonorrhœica*. I do not believe that gonorrhœal pus ever penetrates the walls of the tubes and thus produces these diseases. But a specific gonorrhœal inflammation of the mucous membrane of the tube, with secretion of pus into the cavity of the latter, is accompanied by a non-specific inflammation of the entire tubal wall. This may also excite peri-salpingitis, peri-oöphoritis and so forth; the organs involved may become adherent to each other and displaced, but we never meet with a purulent exudate of the same nature as that found in the cavity of the tube itself. This also explaines why, in some instances, gonorrhœal disease of the uterine appendages is

accompanied by severe and violent symptoms, frequently resembling those of a peritonitis following perforation, whereas in other instances it develops insidiously, scarcely manifesting any symptoms at all. In the former cases, gonorrhœal pus escapes through the *ostium abdominale* into the peritoneal cavity; in the latter the inflammation of the external surfaces of the adnexa is non-specific in character.

According to what I have just stated, I must necessarily regard the terms, "suppuration of the uterine appendices and peri-uterine s. pelvic abscess," as inaccurate, and from a general pathological point of view, as productive of confusion; we invariably find free pus in the tubes and peritoneal cavity or an inflammation of the adnexa, but never destructive suppuration of the tissues of the pelvic organs. In cases in which abscesses are discovered in the walls of the tubes, in the tissues of the *ligamenta lata* and in the ovaries these abscesses are, as I shall later on show, due to septic infection, but not to gonorrhœa. The latter disease produces suppuration only on surfaces.

I purposely enlarged somewhat on gonorrhœal salpingitis and its consequences, as this form presents a typical example of infectious salpingitis in general.

There is one more point to which I wish to call attention. Gonococci have not always been discovered in pus coming from the tubes in cases in which clinically there existed no doubt as to the gonorrhœal nature of the infection. The conditions under which the gonococci are destroyed, or prevented from further development, have not yet been ascertained; further investigation will also have to show whether, in cases in which gonococci are absent, there are not present other microbes belonging to one of the groups mentioned further on.

2. *Salpingitis tuberculosa.*—Alfred Hegar's lately published work, "*Enstehung, Diagnose und Chirurgische Behandlung der Genitaltuberculose des Weibes,*" relieves me of the necessity of entering more fully into the consideration of this form of salpingitis. Lawson Tait denies the existence of this form, or rather, he admits it, but only "for the third and contracting stage of pyosalpinx." This admission simply discloses his ignorance of the true nature of tuberculous infection. The pus in a case of purulent salpingitis, whether it be gonorrhœal or otherwise, may of course undergo casea-

tion. This was called tuberculization before Koch's discovery of the *bacillus tuberculosis*; now it is termed coagulation-necrosis, according to Cohnheim-Weigert. It is this, which Lawson Tait confounds with the genuine infection by the bacillus of tuberculosis.

A pyosalpinx may remain in this third stage indefinitely: a tuberculous salpingitis will never result therefrom unless there be added a tuberculous infection.

3. *Salpingitis actinomycotica.*—This form is called by Lawson Tait "an equally ridiculous subdivision based on mere theory, not on fact." It seems to me before making such an unintelligible assertion it would have been his duty to inquire whether there really is no case on record to support me in including this form in my enumeration. In my paper, above mentioned, I named the author who had furnished this case; I will now accurately give my authority: Adolph Zemann, "*Über die Aktinomycose des Bauchfells und der Baucheingeweide beim Menschen, Medicin. Jahrbücher der K. K. Gesellsch. Ärzte in Wein,*" 1883, S. 477, Fall 4. The tubes in this case were dilated and filled with pus and clumps of the actinomyces, their walls were thickened and exhibited numerous granulations produced by the fungus. The fungus had migrated either from the vagina or from the intestines which were found extensively adherent to the tubes. What Lawson Tait does not know, has no existence for him. "Germanica sunt, non leguntur."

GROUP II.—FORMS OF SALPINGITIS DUE TO SPECIFIC MICROBES IDENTICAL WITH THOSE PRODUCING TRAUMATIC INFECTION.

Salpingitis septica (pyæmica, ichorosa, purulenta, diphtheritica).—The term *salpingitis septica*, is rather general and inaccurate; as when speaking of a pyosalpinx we simply mean that the tube contains pus, when employing the term *salpingitis septica* we merely indicate that the disease is due to infection by a septic virus. It is at the present time a matter of extreme difficulty to diagnose the nature of the pus and the nature of the infection presented to us in an individual case. Now, we certainly know that the microbes producing the different kinds of traumatic infection known clinically as septicæmia, pyæmia, diphtheria, phlegmon, erysipelas, may one and all invade the genital tract; we may hence infer the existence of an equal number of varieties of salpingitis, i. e. *salpingitis septica, pyæmica, diphtheritica, phlegmonosa, erysipelatosa.* In

order to complete our scheme we should add *salpingitis putrida*, corresponding to putrid infection, whereby the difficulties are still further increased.

Notwithstanding the progress made in bacteriology, we have not yet succeeded in isolating and classifying the microbes which cause the clinically different forms of traumatic infection; consequently it is impossible to do this with regard to the different forms of *salpingitis septica*. However, the work done by Doléris, E. Fränkel, Lomer, A. H. Barbour, Nöggerath, Cushing, in the domain of puerperal infection has given us some positive results.

There are two points which are to be considred fundamental:

(1) The microbes of puerperal septicæmia are identical with those producing traumatic infection in general. During the puerperium after abortion, as well as after parturition at term, the genital tract is far more susceptible to infection, or the conditions are far more favorable to the spreading of infection, than at other times.

(2) As has been demonstrated by Ogston, Hueter and Rosenbach all suppuration is due to the action of microbes; several varieties of these, like the *streptococcus pyogenes* and *staphylococcus pyogenes*, have been closely studied, but it is known that they are not the only varieties which produce pus. As doubtless all of these carriers of infection may play a rôle in the production of salpingitis, we can readily see how complicated the question of infectious diseases of the tubes has become and how unscientific and untenable is the meaningless name of pyosalpinx. Yet there is a certain comfort in hoping that the matter may be somewhat simplified. Some of the forms of traumatic infection, for instance, sepsis, and diphtheria, pyæmia and phlegmon, are probably produced by identical micro-organisms, and the course of the disease may be modified by the nature of the tissue first attacked and by the manner in which the infection spreads, whether by the blood or lymph channels.

All of these infections, as is well known, have a double effect—a local one in the genital tract, and a constitutional one, which is brought about through the medium of the circulation, and which is seen not only in the system at large, but also in the localization of the infection in organs distant from the point of entrance of the micro-organism. When systemic effects are produced by the virus of putrid infection, the disease is called sapræmia; when by the

virus of septic infection, septic toxæmia or ptomaine poisoning; when by that of purulent infection, pyæmia.

We thus meet with an essential difference between the diseases of the genital tract, produced by the microbes of Group I, and those of the traumatic infection. The above mentioned severe and acute constitutional symptoms are but slightly indicated, or may even be absent in the diseases of the first group, i. e. gonorrhœa, tuberculosis, actinomycosis, whose course is chronic; whereas in diseases of the second group the rapidity of their development and the malignity of their course may almost entirely obscure the local disturbance in the genital tract.

As is readily seen, the septic diseases of the tubes are not independent diseases; aside from the local disturbances co-existing in the uterus, vagina and external genitals, the whole circulatory system is usually affected. In this respect, as Lawson Tait rightly remarks, septic disease of the tubes is not a specific ailment; this, however, is of no importance in an enumeration of the varieties of salpingitis. An endometritis or a *colpitis gonorrhœica* may co-exist with a *salpingitis gonorrhœica*, and in the same way *salpingitis septica* may be accompanied by other diseases of the sexual organs, which are due to the same cause. There is, of course, no such thing as an affection of the tubes merely.

Salpingitis septica, co-existing with severe puerperal septicæmia or "lymphatic peritonitis" has never as yet, it is true, given the surgeon an opportunity to remove the principal focus of the disease by extirpation of the tubes. It is possible, however, that under certain circumstances such a procedure might be indicated. B. S. Schultze, "*s. Verhandl. d. gynækolog. Section d. Versammlung deutscher Naturforscher*," in Berlin, 1886, has recently succeeded in amputating a puerperal uterus, in a case in which it was impossible otherwise to remove the placenta, which had become the source of septic infection. Lately two cases came to my knowledge in which the tubes burst from overdistention with pus, whose nature, whether gonorrhœal or septic, was not ascertained. In both cases a general peritonitis resulted which proved fatal, in one on the fourth, in the the other on the twenty-first day after confinement. It is clear that in both these cases the salpingitis had existed before delivery. I shall afterwards relate a case of my own in which this certainly was the condition. Cases of this kind will be diagnosed more frequently

and more readily as soon as our attention has been called to them, and we may then expect to hear of their treatment by operation. Cases of salpingitis, consequent upon traumatic infection in non-puerperal women, are, of course, of much more frequent occurrence. The carriers of infection may, for instance, be directly introduced into the tubes by means of an infected sound. The introduction of a septic instrument into the uterine cavity may be followed by a septic salpingitis. In cases in which we observe an exudative pelveo-peritonitis after the introduction of an infecting sound, after an intra-uterine injection or a *curettement* of the *mucosa uteri*, the infection almost always spreads to the pelvic peritoneum by way of the tubes and exceptionally only through the muscular walls of the uterus. The severe systemic disturbances, the diseases of the uterus and pelvic peritoneum, may gradually subside, whereas the tubal affection remains. A pyosalpinx has formed, the tubes are filled with pus, which can have been produced only by the action of one of the specific microbes of traumatic infection: perhaps by the *staphylococcus pyogenes*.

Two cases of my own may serve as illustrations. In one of them a physician had performed *abraiso mucosæ uteri* without antiseptic precautions, infection took place and a *pelveo-peritontis exudativa* followed, after the subsidence of which I could easily feel each tube thickened to the size of a thumb. At the operation both tubes were discovered to have thinned walls and to contain thick pus resembling that found in an abscess. The ovaries were small and enveloped in masses of very dense, connective tissue. I removed the tubes, but left the ovaries. The woman made a good recovery. The adnexa had been in a healthy condition before the mucous membrane of the uterus had been scraped. I have already published the other case ("*Verhandlungen der Gesellsch. f. Geburtsh," zu Leipzig*, 17 April, 1882; "*Centralb. f. Gynæk.*," 1882, p. 558); multipara of twenty-nine years; three spontaneous deliveries, at the fourth *placenta prævia*, and forceps applied before complete dilatation of the os. Puerperal fever. Recovery, but permanent pains in the right epigastrium. A short time after, renewed pregnancy, in the third month of which a prominent gynæcologist ascertained disease of the right uterine appendages; at full term rapid and spontaneous delivery. On the third and subsequent days of the puerperium, chills, high intermitting fever, icterus, in short the

symptoms of acute pyæmia. Death on the thirtieth day. The autopsy revealed *salpingitis purulenta dextra*, and several abscesses in the right ovary and right broad ligament. The remainder of the genital organs, the adnexa on the left side normal. I explain the course which the disease took in this case in the following way: At the fourth parturition, septic infection and localization of the disease in the uterus and the appendages on the right side; subsidence of the grave constitutional disturbances and persistence of a pyosalpinx, probably due to *streptococcus pyogenes*, latency of pyosalpinx during subsequent pregnancy. After delivery increased absorption of pus, abscesses in the ovary and broad ligament, acute pyæmia and death. In a case of this kind a septic-infectious disease, originally extending over large portions of the sexual tract, is finally concentrated in the tubes. Why should not such a case, in which the tubes chiefly appear affected, present a "specific ailment" as well as does a case of *pyosalpinx gonorrhoica*, in which *ceteris paribus* we have the same limitation of the disease to the tube as a principal focus for further infection.

What I desire to prove by these somewhat extensive remarks is, briefly, as follows:

1. Numerous cases of *salpingitis purulenta* ("pyosalpinx") are due to traumatic infection, are septic forms of salpingitis.

2. There are as many forms of septic salpingitis as there are forms of traumatic infection, and of microbes producing the same.

There is, however, an additional reason why Lawson Tait denies septic salpingitis to be a specific ailment. As we see from his startling remarks in the *Medical News*, April 24th, 1886, he does not believe in sepsis at all, does not believe in infection, denies the principles on which the practice of modern surgery and obstetrics is based. He has been taught nothing by the researches of Semmelweis and Lister, Pasteur and Koch. And why? Because his own success in combating septic infection is to him proof of the non-existence of septic infection. We are accustomed to Lawson Tait's reckless statements. Without taking the trouble to refute them scientifically, I but wish to call to mind his assertion that menstruation does not depend upon the ovaries, but upon the tubes, that the mortality of the Cæsarean operation is still 99⅔ per cent. His denial of traumatic infection is a statement of the same kind.

I should like to hear Lawson Tait's answer to the following questions:

1. What disease, before the introduction of Listerism, killed thousands of patients who had received wounds or who had been operated on? What, according to his views, was the cause of death in his own cases, when he lost patients after operations, if not, as everybody else believes, septic infection?

2. What is puerperal fever?

Lawson Tait disputes the correctness of our teachings regarding infection, but he has failed to give us any other explanation of its phenomena.

GROUP III.—FORMS OF INFECTIOUS SALPINGITIS PRODUCED BY SPECIFIC, BUT AS YET UNKNOWN, MICROBES.

1. *Salpingitis syphilitica.*—This form has been described by Bouchard and Lépine (*Gazette Med. de Paris*, 1866, No. 41). Both tubes were swelled to the thickness of fingers, and contained three gummata of the size of hazel nuts. The description given by these authors of the tubal disease agrees fully with the changes brought about by syphilis in other organs. Of more recent authors, Gill Wylie expresses his opinion that tubal syphilis does occur ("Diseases of the Fallopian Tubes," etc., January 24th and February 7th, *The Medical Record*, 1885). He says that "syphilis may cause salpingitis, just as it does otitis or ozæna." He also calls attention to the fact that "endometritis in syphilitic subjects has a most obstinate character." Compared with the actual observation of Bouchard and Lépine, the clinical remarks of Gill Wylie are, of course, of theoretical value only.

Like Lawson Tait, I, myself, have never yet had occasion to observe an undoubted case of tubal syphilis. We should bear in mind, however, that our attention has been but little called to the anatomy and clinical forms of this disease. We are not justified in denying this form altogether, as we are not in a position to dispute the reliable authors who have testified to its existence. Others may have seen what we ourselves have never had occasion to witness. I desired to give a most complete enumeration of the forms of infectious salpingitis hitherto described; I could as little have omitted *salpingitis syphilitica* as I could have done *salpingitis actinomycotica*, of which also up to date but one authentic case has been observed.

2. Occasionally we find in young girls, who have never had intercourse with a man, tubes filled with pus and pelveo-peritonitis. This has been accounted for in various ways. It has been said that in these cases a serous catarrh is intensified and changed to a purulent inflammation; that the suppuration is due to catching cold at the menstrual period, or to a trauma. These cases have also been adduced as evidence to show "that tubal suppuration is not always of gonorrhœal origin." Yet also in these cases there is always an infection, and usually a gonorrhœal infection. I, myself, have seen a comparatively large number of girls of all ages, from infancy to puberty, who were infected with gonorrhœa. We know how easily the infecting germs are carried from one person to another; for instance, parents and children may use the same sponge or bath tub; the germs may adhere to fingers, linen, etc. The girls infected may further spread the disease in school, and so on.

Aside from the gonorrhœal, the tuberculous infection is to be mentioned as a cause of pyosalpinx in young girls. Just at present I am treating a girl of 17, who is suffering from a disease of both appendages, complicated with pelveo-peritonitis. The tubes can be distinctly felt, and are thickened and nodular. She has a hectic appearance, like that of a consumptive; her lungs, however, are normal. The father of the girl was, not long ago, operated on for tubercular orchitis. I hope that the operation will confirm my diagnosis of *salpingitis tubecrulosa.*

Undoubtedly the microbes of traumatic infection may also, after accidental lesions of the external genitals, get into the tubes of young girls; they may also enter from the peritoneal cavity. I know of a case, a girl of 16, in which an inflammatory disease of the right uterine appendages developed, consequent upon a retro-typhlitis.

My reason for again considering these forms of infectious salpingitis belonging to Groups I and II, in regard to their occurence in children is this: there are evidently other infections of the female genital tract, which have been observed in children but which have not as yet been recognized as special forms; consequently they are to be placed in Group III, in opposition to the forms of the two preceding groups. E. Fränkel, of Hamburg ("*Bericht über eine bei Kindern beobachteten Endemie infectiöser Kolpitis, Virch. Arch.*" February, 1885), and Johann C'seri, Budapest ("*Zur Ætiologie der*

in fectioesen Vulvo-vaginitis bei Kindern," *Wiener Med. Wochenschrift*, 1885), describe an infectious disease of the vagina and vulva, the former believing it to be due to a special coccus, the latter to a coccus identical with Neisser's gonococcus.

Hennig (*Krankheiten der Eileiter*, page 67) in a girl of ten and Eppinger (*Prager Zeitschrift für Heilkunde*, 1882, page 36) in an adult witnessed a dysenteric inflammation extend to the mucous membrane of the genital tract; the disease in its new location assumed the appearance of a diphtheritic inflammation.

Suppuration is sometimes observed in the vaginæ of children suffering from helminthic disease. In these cases the suppuration is not caused by the irritation of the parasite especially the oxyuris, but by certain microbes carried into the vagina by the parasites. The nature of these microbes has not as yet been sufficiently investigated to allow of their classification.

It has long been known that certain infectious diseases, like typhoid fever, scarlatina, variola, cholera, may invade the genital tract. The local affections are probably caused by the same specific microbes which produce the typical constitutional disease. This, however, still remains to be proven.

At the close of this enumeration, I wish to repeat that in every case where the vagina or uterus is the seat of one of the diseases named, such disease may extend into the Fallopian tubes. I am well aware that I am standing on an unsafe scientific basis regarding my third group of forms of infectious salpingitis. For this very reason I deemed it advisable to group them together, thus keeping them apart from the better known forms; besides I desired to point out the object which should be kept in view in investigating this subject and in endeavoring to elucidate it still further. It is, finally, self-evident, that there are also mixed forms of salpingitis. Different varieties of micro-organisms may enter the tubes either simultaneously or successively. The forms most frequently found combined are the microbes of the gonorrhœal and tuberculous, and of the gonorrhœal and traumatic infection and those of the different varieties of the latter.

Every physician whose scientific standpoint is the same as mine will admit, that matters regarding salpingitis are immensely more complicated than Lawson Tait imagines, and that it is not sufficient to make an abdominal section, to remove the uterine appendages

and to satisfy oneself with the diagnosis of pyosalpinx in case the tubes are found filled with pus; but that it is our duty, employing all the means furnished by modern science, to endeavor to make an accurate diagnosis of the form of disease affecting the uterine appendages before the operation, and afterwards to add to our clinical observation careful pathological and bacteriological examination of the specimen. This certainly is a higher standpoint than that occupied by Lawson Tait, to whom the removal of the uterine appendages is the chief thing, and who, neither before nor after the operation, concerns himself with the nature of the disease treated. He admits, himself, that in every fifth case he made an error in diagnosis. In a man like Lawson Tait, so great in his own estimation, it seems rather small to attempt to conceal his ignorance by resorting to insulting and scurrilous remarks in regard to German scientists. I advise Mr. Lawson Tait to learn German and to read the works of German gynæcologists; he may perhaps come to the conclusion that there is much which he might profitably study.

Here in Germany, Lawson Tait is held in high esteem, as he deserves to be, on account of his brilliant practical results. We have long since, however, ceased to regard as serious his theoretical utterances, which pretend to be scientific. The tone which he adopts in his polemic writings does not prevail with us in Germany, and it is certainly looked upon as undignified by every gentlemanly Englishman.

I am, sir, etc., DR. M. S AENGER,

Privatdocent at the University of Leipsic, President of the Obstetrical Society of Leipsic.

IV.—DR. EDWARD B. WESTON on presentation of a thesis, entitled,

METRITIS,

read by the SECRETARY, was elected Fellow of the Society.

W. W. JAGGARD, M.D., *Editor.*

2330 Indiana avenue.

CHICAGO MEDICAL SRCIETY.

Stated Meeting, Dec. 6th, 1886.—THE PRESIDENT, EDMUND J. DOERING, in the chair.

PROFESSOR JOHN A. ROBISON read a paper on the antipyretic action of antipyrin and thallin, which appeared in the January nnmber of the *Journal and Examiner*, and in which he had collected and condensed the results of the experiments of a large number of clinicians. The largest number of observers agree that antipyrin is a safe, efficient and unobjectionable antipyretic. Contrary to believe in general it does not have a depressing or debilitating effect on the heart, whereas thallin has. Antipyrin causes no change in the blood, whereas thallin has a deleterious effect on the blood and veins. In conclusion, the author believed antipyrin should always be given to produce apyrexia in cases where the temperature is excessively high. He does not believe the drug has any power to lessen or prolong the duration of the continued fevers. He also stated that it not only lowers the temperature, but relieves the pain that accompanies acute articular rheumatism with endocarditis, especially if given with alkalies.

DR. J. J. M. ANGEAR said he had not given this subject any special study, but the subject of temperature he had, and it might not be amiss to speak of some difficulties against which we have to contend. If radiation is increased or diminished and metabolism remains normal, we have increased or decreased temperature; or if metabolism of the body be increased or diminished and radiation remains normal, then we have increased or decreased temperature. We have no means of arriving at any definite conclusion whether our patient, with increased temperature, is suffering with increased metabolism or decreased radiation, or both. We know from observation and from various experiments that the internal part of the body is very frequently hotter than normal, during the cold stage of fever, and cooler than normal during the febrile stage. May not the sum total of caloric in the body be diminished when the thermometer tells us that it is increased, and *vice versa?* If we answer yes, then we are found trying to diminish the temperature, when we should be husbanding what we have. Does not this show that there is a certain amount of pathological knowledge in regard to body temperature at which we have not yet arrived? And our therapeutical knowledge is necessarily as defective in this regard.

Do antipyretics facilitate radiation or check metabolism, or both, or do we know anything about it except its action upon the thermometer? If we could arrive at some definite, pathological conclusion as regards the pyrexial state of the patient, then we could, perhaps, arrive at some scientific knowledge of the action and use of all antipyretics. Had we an instrument by which to measure the amount of radiation and metabolism, it would be of far greater value to us than the thermometer.

PROFESSOR G. C. PAOLI said: The paper was well prepared and interesting, but the question arises, do we know anything about the essential nature of fevers? He would answer, no. But we know the effect, if we do not know the nature, and infevers we generallly use remedies to lessen the temperature. He had used antipyrin in only eight cases: two of them typhoid fever, two of scarlatina, two of lung trouble. In regard to the fever, he admitted that the remedy had an antipyretic effect. In two cases the patients vomited as an effect of taking this remedy. He commenced with ten grains, and it diminished the temperature but did not stop the course of

the fever, which lasts usually from five to six weeks. One effect he found from the use of antipyrin, is the lessening of nervous irritability. In a case of tuberculosis, after using antipyrin he began with quinine and found it more of a tonic. In the cases of scarlatina in which he used antipyrin he did not observe any favorable effect; it lessened the temperature, of course, but the same effect was produced by quinine.

DR. H. GRADLE said: Although his line of practice does not often enable him to watch the effects of antipyretic drugs in disease, yet he said he could speak of the effect of antipyrin in one disease, viz., the dentition fever of infants; which, although not usually serious, is in a great many instances annoying, and in which, when the fever is high, there is a possible danger of convulsions. He had never heard of any drug that will reduce the fever under these circumstances as promptly and with as little disturbance as antipyrin. With a temperature of 103° F. a child can be rendered quiet in the course of an hour by one dose of four grains, and perhaps a second dose of two grains, and be pacified for the entire night. He desired to ask the author if he has had any experience in the continued use of thallin in typhoid fever, with the effect of aborting the disease? According to some rather startling statements made several months ago by Ehrlich, it was claimed that it reduced the fever permanently in the course of eight to twelve days.

DR. G. W. WEBSTER favored the use of antipyrin. He had used it in cases of typhoid pneumonia. One point is the favorable action of antipyrin on the headaches of typhoid fever. One of the most distressing symptoms when the temperature is very high is the severe, continued headache and the delirium which always accompanies it. He had not found any other remedy that would have as good an effect in these cases as antipyrin, which always relieved the headache promptly.

DR. H. T. PATRICK said that he is quite partial to antipyrin and has used it in a number of cases. It will often effectually reduce the temperature when baths and sponging will not. In a case of pneumonia in a child of eight years he gave antipyrin from the beginning to the end, with good results, except for one day when he tried sponging instead. The child was sponged off six times in six hours, five to ten minutes each time, without any reduction in temperature. Sometimes cold baths have no effect in reducing the temperature because of a very thick panniculus of adipose tissue. Here antipyrin is indicated. The continuous administration of antipyrin in tuberculosis he had found in a few cases very gratifying. In one case ten to fifteen grains were given every afternoon for a term of ten weeks, with great relief to the patient. His temperature was 103° F., and there was prostration and irritability of mind. The antipyrin was a relief to the patient, and to his family on account of the improvement in his disposition.

DR. J. FRANK had had a personal experience with antipyrin, having taken it two years before while suffering with typhoid fever. The temperature ran as high as 106° F., and quinine had no effect in reducing it. He took antipyrin in 15 and 30 grain doses, first by mouth and then by rectum, with the effect of rapidly reducing the temperature. He has used it in practice in the treatment of erysipelas and typhoid fever, but he does not depend upon it entirely, giving it when the temperature rises very high. In erysipelas he has always found that the antipyrin will reduce the temperature.

DR. C. W. LEIGH said he had seen antipyrin used in a limited number of cases, three or four, of typhoid fever, and none of the patients were older than twenty-one. In these cases there was a visible decrease in temperature and the delirium was lessened very much.

PROFESSOR ROBISON said that he had not pretended to give anything except the results of the observations of a large number of physicians who

had used this drug and recorded their experiences. Also the results of quite a number of experiments of therapeutists, as for instance Umbach's experiments in regard to the decrease of tissue-waste. He did not try to detail all these different experiments, but attempted to epitomize the well known actions of the drugs that have been observed. Two of these actions, the increase of heat radiation by the dilitation of small blood-vessels, and the decrease of oxidation, are the main factors in producing the fall of temperature. Dr. Angear says if we can arrive at some conclusion in regard to the manner in which the drug acts, we can use it. Professor Robison thinks we have arrived at a conclusion; these experiments have been carefully conducted and we have seen that antipyrin actually reduces high temperature without any danger to the patient, and it is only in cases where the high temperature itself is a danger to the patient that its use in large doses is to be recommended. In regard to its use in aborting typhoid fever, Professor Robison had not tried it except in four cases; one was a boy under seventeen and another one fourteen. The temperature was about 103° F. He gave large doses and in three days all signs of fever had disappeared. A few days afterwards another member of the same family was taken sick, and the antipyrin was used as before, but that patient went through all the stages of typhoid fever. In another family there were five cases of typhoid fever. Two of the family had had the fever, and one of them died; then three others took sick. Antipyrin was given in large doses in all these cases, but it failed to abort the fever in any of them.

DR. HENRY GRADLE read a paper entitled

DISEASES OF THE VAULT OF THE PHARYNX,

which appeared in the January number of the *Journal and Examiner*.

PROFESSOR W. E. CASSELBERRY said he agrees with the author on the importance of the pathological states which occur in the naso-pharynx, and would particularly emphasize the importance of the subject in connection with ear diseases. It is usually neglected because the practitioner does not use the rhinoscope. This can readily be used since the introduction of cocaine; formerly, the pharynx being so irritable, it was a different matter, and considerable practice was necessary in order to acquire the use of the mirror, but now a 2 per centum solution of cocaine sprayed around the pharynx will so reduce the sensibility that the introduction of the rhinoscopic mirror is comparatively easy. He was somewhat surprised at the size of the mirror recommended; usually a small one about one-half inch in diameter is used. This, of course, will not show the entire naso-pharynx at one time, but it can be easily rotated from side to side. With a large mirror a hook is always necessary, which usually complicates the case and is more apt to gag the patient than the use of a small mirror without the hook. He is accustomed, in considering the diseases of the naso-pharynx, to divide the inflammatory affections into three classes. First, the simple chronic naso-pharyngitis; second, the hypertrophic naso-pharyngitis, and third, the atrophic naso-pharyngitis. In the first there is a simple inflammation of the mucous membrane and of the connective tissue beneath the membrane, the connective tissue being sometimes involved to such an extent as to form, here and there, thickened areas of infiltration. He thinks that many of the cases in which the author sees no perceptible lesion in the naso-pharynx can be graded in this class. The hypertrophic form of disease may be sub-divided into two classes, one in which the follicular structures are uniformly hypertrophied, the group of follicles constituting the tonsil of Luschka being enlarged and appearing in the rhinoscopic mirror of about the size and configuration of an ordinary tonsil of the throat. And the other sub-class in which the enlargements are pendant, pear-shaped bodies resembling stalactites, and hence called the stalactitic form. This is the form which was originally described under the name of

adenoid vegetations, and the one which is met with most commonly in Germany, whilst the uniform enlargement is more common in this country. The atrophic naso-pharyngitis, as is the case in the pharynx itself, may be regarded as a later stage of the hypertrophic naso-pharyngitis, although in rare instances it may commence in the atrophic form. During the hypertrophic stage the proliferated connective tissue cells gradually encroach upon the glandular structures, and, so to speak, squeeze them to death, whilst the connective tissue cells themselves, as in cirrhosis of other organs, of the liver, for instance, later contract and atrophy. The mucous membrane is now pallid and thin, and is encrusted over with a dry secretion. This is the form of disease which so often gives rise to fetor of the breath, especially when it involves the naso-pharynx, although the disease is not restricted to that locality. In reference to the treatment there is little to add to what has already been said. He had not employed the curette much as his patients will not tolerate the blood and pain. The pain now is not as great as before the introduction of cocaine, but the blood horrifies the younger patients, and the parents. He has found an equally efficient, although a more lengthy treatment, in the galvano-cautery. It is bloodless and painless. In cases of stalactitic growths the best method is the galvano-cautery snare. For the uniformly enlarged variety he employs a Hemming naso-pharyngeal electrode. Nitrate of silver as a means in the treatment of catarrhal conditions, although it has been greatly abused, is unquestionably effective if properly used. In cases of simple chronic inflammation of the mucous membrane, where there is thickening of the subcutaneous tissue, a strong solution applied by means of the cotton swab, 40 grains to the ounce, used by the physician every day, then every two days and finally twice weekly, will lead to the absorption of the infiltrated material. Strong solutions of nitrate of silver (40 gr. to ℥i) cause absorption of infiltration, whilst weak solutions (10 gr. to ℥i) stimulate the further production of infiltrated material and the activity of the glands. Consequently weak solutions will only aggravate the hypertrophic form of disease. For the same reason a weak solution will benefit the atrophic form. In reference to the pharyngeal bursa, he expressed the opinion that too great importance has been ascribed to it.

PROFESSOR F. O. STOCKTON said his experience in the treatment of chronic nasal pharyngitis by the use of nitrate of silver had been anything but pleasing, and he had never seen a beneficial result from it. It is recommended by many in the form of powder, 1 grain of nitrate of silver powdered with some drug and distributed over the membrane; but his experience had been negative. He had found solutions of it to be of no benefit whatever. It discolors everything, is a dirty, useless drug, and greatly overestimated. The use of the curette in removing adenoid vegetations is quite a recent thing. He had not tried the method that the author speaks of, to any great extent, and he prefers the gouge forceps. He generally uses the galvano-cautery, as it is now possible to use it without difficulty with the aid of cocaine, and the fact that there is no blood lost is a very important consideration in the treatment of young subjects, because, even if they have no pain, if they see a drop of blood they are frightened and begin to scream.

DR. M. R. BROWN said in regard to the size of the mirror recommended by the author, he would consider it large, and apt to produce gagging by coming in contact with the pharyngeal walls, but if cocaine is used this may be avoided; and should a mirror about half the diameter of the one shown be employed in posterior rhinoscopy, nine out of ten instead of three out of four cases can be examined at the first visit.

Referring to the pharyngeal tonsil producing bronchitis and cough, the irritating mucous finding its way into the larynx has a great deal to do with producing laryngitis, which will give rise to cough. The case of

bronchitis mentioned by Dr. Gradle was evidently of a reflex nature. After having treated the pharynx with nitrate of silver for any length of time, there results a thickening of its mucous membrane. He believes that nothing is gained from the use of this remedy in the conditions mentioned. Such has been his experience after having employed it in solutions of various strength in the different diseases of the pharynx. He occasionally makes use of the cold-wire snare, but prefers the galvano-cautery. He also employs a gouge or curette with satisfactory results; but, owing to the pain it causes the patients, he has devised a punch forceps, the use of which is attended with less pain than, and is as satisfactory as, the gouge.

Regarding the hypertrophied tonsils receding between the ages of 25 and 30 years, he said he had seen a number of cases in which the patients with this growth were beyond this age. That day he had examined a man 35 years of age, and a short time since removed a similar growth from a man who was over 50 years old.

Speaking of the microscopic appearance of the naso-pharyngeal growths, Mackenzie says that in adenoid vegetations "the glandular element is, as a rule, more marked in growths taken from the vault of the pharynx, whilst in vegetations taken from the lateral walls the stroma of Kis is found in greater abundance."

DR. GRADLE said: As to the size of the mirror, of course where the patient will not permit you to use a large one you will have to use a small one; but where you can use the large mirror, there is an advantage in gaining a full view of everything. In speaking of being able to examine three out of four, he referred to patients as they come. As a rule, he does not use cocaine in the first examination, because it is so disagreeable. he does not use the hook where the distance between the posterior wall and the pharynx is considerable. As regards nitrate of silver, there are many conditions in which it is entirely useless. One is the practice of cauterization with the solid stick. he has never done this. But there are certain conditions where nitrate of silver is useful and acts promptly, viz., chronic hypertrophic catarrh. And it is sure to give relief in the more acute forms of catarrh, where the pharyngeal tonsil is not enlarged enough to cause damage, but swells from temporary congestion. The patient can use a preparation of 4 per centum and apply it himself with a brush, but it is preferable to have the physician use it. The spray, according to his experience, is more effective and not so disagreeable as a dry powder, but it requires considerable care on the part of the physician to avoid staining the clothing.

PROFESSOR F. E. WAXHAM reported a case of

PSEUDO MEMBRANOUS LARYNGITIS, TREATED BY ELECTROLYSIS.

Almost every disease of the human body has been treated by electrolysis, but the larynx has only recently been invaded. It seems probable that stenosis of the larynx from membranous exudation may be reduced by the galvanic current, the false membrane being destroyed or detached. On October 26 the author was called to see a child of 8 years who had been sick nearly a week with membranous croup. She was in the last stages of asphyxia, and all hope of her recovery had been abandoned. An intubation tube was threaded with platimum wire and used as a negative electrode, and introduced into the larynx without difficulty, when respiration at once became easy. The child coughed up considerable soft membrane and ropy mucus and became conscious. The platinum wire was then insulated by passing it through very small wire tubing, and the projecting wire was attached to a twelve-cell McIntosh galvanic battery. A positive electrode which consisted of an ordinary sponge moistened with warm water was placed over the larynx, and a current from ten cells employed. The cur-

rent caused some pain and considerable redness of the skin under the sponge, and was reduced to eight cells and passed for five minutes, during which time considerable mucus and softened membrane were expelled. The tube was withdrawn, and the child drank two glasses of milk and passed into a quiet sleep. About two hours later, the respiration having become labored, electrolysis was again performed in the same manner, a current from first eight and then ten cells being employed. The effect of the current was to detach and expel patches of false membrane. No further experiments were made with electrolysis. The child died on October 28.

It was expected that the galvanic current would have but little effect upon the false membrane, but that it would relieve the swelling and congestion of the tissues. On the contrary, the current had a decided effect in loosening and detaching the membrane, and the secondary effect was to increase the swelling and congestion.

Experiments were made on two rabbits with a view of ascertaining the effect of the galvanic current on the healthy larynx. One was given chloroform, the tube introduced into the larynx and a current from eleven cells passed for five minutes. Some dyspnœa followed which was attributed rather to rough usage than to the effect of the current. This subsided and the rabbit recovered. The other rabbit was given a current from eight cells, and apparently suffered no inconvenience.

The author thought no deductions could be drawn from a single case; that the current might have been too strong, or not strong enough; that possibly it may be necessary to use an anæsthetic and employ a current strong enough to verge on cauterization. These points could be decided only after further investigation.

PROFESSOR W. E. CASSELBERRY said he considered the report an extremely interesting one, and suggested that the experiments be carried further; to ascertain if the galvanic current has any effect in softening the false membrane outside of the body.

PROFESSOR FRANKLIN H. MARTIN said he had used electrolysis for about three years in the treatment of strictures of the urethra, stenosis of the uterine canal, chronic inflammatory exudations surrounding the uterus, and in fibroid tumors. In listening to this interesting report the question occurred to him whether the effect of loosening the croupous membrane could be attributed to the electrolytic effect of the current of electricity, or merely to the mechanical effect of the electrode. Electrolysis describes the terms upon which it acts; in the case reported we get no evidence of this action. He should be inclined to attribute any beneficial effect that might have occurred to a counter-irritant effect of the positive sponge electrode that was situated externally. In regard to the power of electricity to dissolve substances similar to the exudate found here, he should judge from experience that it possesses that power. He had been told that a current of electricity passed through a culture of bacteria had the effect of destroying the life of the germs. May this not explain an action that might be worth considering in troubles similar to the one under consideration?

DR. J. FRANK suggested that if the author had used a weaker current he would have had a better result. In stricture of the urethra five cells of the McIntosh battery, with the fluid reduced one-half with water, are used. Twelve cells could hardly be borne on the skin. It would dissolve the membrane and produce inflammation.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, December 20th, 1886.—THE PRESIDENT, EDMUND J. DOERING, M.D., in the chair.

PROFESSOR HOSMER A. JOHNSON read a paper on PSEUDO-MEMBRANOUS BRONCHITIS, which appeared in the January number of the JOURNAL AND EXAMINER.

The record of statistics shows that a large majority are of a partial character, involving but a limited portion of the bronchial surface, and these, though obstinate and apparently difficult to relieve, usually recover. It is stated, also, that there is more than an ordinary tendency to involve ultimately the fibrous tissue of the lung and bring on that form of phthisis.

In regard to the treatment, he had nothing specially new to offer. He found that the chronic form was most benefited by ordinary anodyne expectorants combined with alteratives, especially of the mercurial class.

PROFESSOR ROBERT H. BABCOCK said the paper is one of the most interesting he had listened to. It was needless for him to say, since such a man as Doctor Johnson has seen but one case, and such a man as Doctor Bowditch has never seen a case, that he had never seen one. In regard to the etiology, he would merely state that R. Douglass Powell says this form of bronchitis may be observed in all ages from childhood to old age. He differs from the author of the paper in saying that it is more frequent in females than in males. He mentions the probability that there is a hyperinotic condition of the blood. The line of treatment pursued by Doctor Johnson is interesting with regard to this point; after giving iodide of potassium and the mercurial salt in pretty full doses the character of the expectoration changed, becoming mucous and frothy, and it was not until these remedies had been given up and syrup of iron substituted that the plastic character of the bronchitis reasserted itself. May it not be that the exhibition of the potassium iodide and the mercurial salt did overcome to a certain extent the hyperinosis which may have existed in this man's case?

PROFESSOR S. D. JACOBSON said it had been his good fortune to see, besidesthis instance of the chronic form, which he saw through the courtesy of Dr. Johnson, one case which represented the acute form of this disease. It was a friend of his, a man of about 47 years of age, who was accustomed to take great quantities of alcoholic stimulants. In the winter of 1871 he came to him and complained that for several days he had had some trouble with his pharynx, and he had expectorated a large amount of mucus. He inspected his pharynx and found a condition such as might be expected from a man who was out of doors a great deal, who was an inveterate smoker and a very convivial man. There were no symptoms of diphtheria; it was a case of pharyngitis or tonsillitis. Under the usual treatment it improved in a couple of days. About a week after he sent for Doctor Jacobson, and he found him with some fever and a very distressing cough. He expectorated great masses of mucus, which were recognized as casts of bronchial tubes of the first and second order. At that time he had never heard of such a case. The next day he found him in great distress, and after a long and tiresome cough he brought up numerous quantities of matter like the first casts observed, which were found to be of the third and fourth order of bronchial casts, and after that he felt relieved, but died on the third day afterward. He then saw a report in the

Scandinavian Medical Archive[1] describing a case exactly similar to this, except that the man was 34 years of age. On post-mortem it was found by incising the chest that it contained air over both lungs, and the bronchial tubes of the first, second and third order all contained casts. The lung contained air mixed with mucus and pus. The trachea contained casts which terminated on the under surface of the epiglottis. The physician questioned whether it was an ascending bronchitis or a descending fibrinous exudation from the pharynx downwards, because in this case, as in his own, there had been tonsilitis about a week before the alarming symptoms set in, but arrives at the conclusion that the disease was primary in the bronchial tubes. He had thus been fortunate enough to observe this rare disease in two cases, one representing the chronic, the other the acute form, and both of them conforming to the rule laid down by Doctor Davis, that the acute generally terminates fatally, while the chronic in many cases terminates favorably. Both of his cases were of the male sex, and both were rather given to alcoholic stimulants.

PROFESSOR E. FLETCHER INGALS said he had had very little experience in these cases. It has never been his bad fortune to meet with a case of acute diphtheritic bronchitis, except those growing out of ordinary diphtheria, which are unfortunately frequent. He had treated three cases of the chronic form of the disease, none of them very severe. In each case there was from time to time expectoration of the croupous deposit, but he did not see them at any time when they were very ill. The history of the chronic cases is that they will have acute attacks from time to time for months or years, running from ten days to two weeks. They almost universally recover from these, though occasionally they die of phthisis. The acute cases, as a rule, die, though from 25 to 50 per centum are said to recover. A friend in the country sent him last winter casts from a large number of the bronchial tubes in which there must have been five or six branches to the casts. They had been coughed up by a patient of his who subsequently recovered.

DR. C. M. FITCH said some eight years ago he had a case of this kind in a lady about to be confined. When he first saw her she was in an almost comatose condition, the face livid, and she was almost pulseless, the respiration fearfully obstructed, although air was entering all the larger bronchi. The woman died a few hours later, the child being born after she had become entirely unconscious. Four or five days later a child of the same family was taken with diphtheritic croup, the membrane passing down through the larynx, when Doctor Fenger performed the operation of tracheotomy. He had no doubt that the lady's case was one of acute croupous bronchitis.

PROFESSOR JOHNSON, in closing the discussion, said, in reply to Professor Babcock as to the influence of the potassium and mercurial salts upon the exudate, not only was the expectoration frothy, but after using these medicines for some time the casts became thin and evidently diminished in amount before they were thrown off. It was his opinion that the mercurial salts and the potassium had some influence in diminishing the amount of the exudate. It be will remembered that from some time in December until February there were no casts thrown off. Some time before that the patient had been taking potassium and mercurial salts. In estimating the frequency of this disease, he had excluded cases which seemed to be of diphtheritic origin; he had seen several cases where there had been well-marked casts thrown off; in one case there were seven successive discharges from the bronchial ramifications of one lung. Those were diphtheritic and were from a child who was recovering from bronchial diphtheria. He does

[1] Vol. iv, fasc. 4, 1872.

not say that this is not in its character anything like diphtheria, but he thinks there is a radical difference between the membrane and that which forms in diphtheria. It does not seem to him that we have the same tendency of disintegration that we have in diphtheritic forms of exudation; the exudate is more plastic. He had purposely not discussed the acute form, as he had not had an opportunity to study such cases. The notes here recorded were made in the presence of the patient, and they seemed to him worthy to be put on record.

PROFESSOR H. A. JOHNSON read a paper on

PNEUMATIC DIFFERENTIATION AND MEDICATION,

which appeared in the January number of the *Journal and Examiner*.

PROFESSOR E. FLETCHER INGALS asked Professor Johnson if he thought the patient would get more of the medicated vapor into the lungs with the compressed air than with ordinary air.

PROFESSOR H. ROBERT BABCOCK said it has always been his opinion that pneumatic differentiation is essentially the same as the administration of compressed air, and he had not found reason to change his opinion. However, in justice to the inventor, he would like to ask Professor Johnson what he thinks of Mr. Ketchum's assertion that the rarefaction of the air around the chest of the patient by lessening atmospheric pressure allows the chest, and therefore the residual air, to expand, and with this expansion of the residual air lessens the resistance to the tidal air. In other words, that if the residual air did not expand, the tidal air would meet with resistance from the residual air as from an air-cushion; also that this expansion of the residual air tends to force out any little plugs of mucus which may have obstructed the bronchi; that in this respect pneumatic differentiation certainly accomplishes more than could be done by the inhalation of compressed air.

PROFESSOR JOHNSON said the claim of a special value in the cabinet as a means of differentiation is based upon a fallacy, viz., the assumption of a *vis a fronte*. If you take the pressure off from the outside of the chest there is a kind of force that drives the fluids to the surface of the body. Suppose you reverse the case, place the patient outside and let him breathe the rarefied air, is there a *vis a fronte?* It certainly seemed to him that there is no such thing. It is a *vis a tergo* that pushes air into the lungs, and a *vis a tergo* that pushes the air out of the lungs, and the equilibrium is maintained. As to the effect of the rarefied air in the cabinet upon the residual air, it is about the same as going up and down in an elevator of one of our tall buildings. In answer to Doctor Ingals it would seem to him that more spray may be carried into the bronchial tubes in the stream of condensed air than in air inhaled without differentiation of pressure. The discussion is simply upon physiology and physics, not the value of pneumatic differentiation. Mr. Ketchum or some one connected with him, invented that term, but the thing itself, taking the name away, is by no means new.

DR. FRANKLIN H. MARTIN read a paper on

ELECTROLYSIS IN THE TREATMENT OF FIBROID TUMORS OF THE UTERUS,

with a description of Doctor Apostoli's methods.

He considered his subject under the following heads:

1. Consideration of the tumor.
2. Means of generating a current.
3. Electrodes, connections and other apparatus.
4. Electrolytic action of the current.
5. Cataphoric action of the continuous current.
6. The difference in the local action of the two poles with powerful currents.

7. Operation and details of application, with a description of Doctor Apostoli's methods.

He divided fibroid tumors of the uterus according to their position, into submucous, interstitial and subperitoneal, according to their condition into hæmorrhagic and non-hæmorrhagic. Any means of generating a continuous uninterrupted current of electricity of 200 milliampere strength that is practicable will answer all the requirements for electrolytic treatment of fibroid tumors of the uterus. Professor Martin uses a battery composed of 115 crow-foot gravity cells for this purpose, from which he can easily get a current of three or four hundred milliampére strength when properly charged. Storage cells and the dynamo were mentioned as possessing a future for this kind of work.

The very strong current that one now used in operations of this kind is made practicable by improvements in electrodes and conduction. Doctor Apostoli overcame the pain caused by high tension currents by using as a surface electrode a thick paste of potter's clay spread upon the abdomen with proper connections from a plate of soft metal upon its free surface. This answers the purpose perfectly, but has the objection of being very troublesome and very inelegant. Professor Martin presented a decided innovation in this direction in the way of a surface electrode. From a soft plate of metal, the margins of which are bent so as to form a concavity upon one surface of an inch in depth, he has constructed an electrode by stretching loosely over this concavity an animal membrane, making the surface between the membrane and the metal water-tight. Through a stopper in the metal surface the inter-surface is filled with a warm saturated solution of chloride of sodium. This contrivance with its membranous surface upon the abdomen, with proper connections from the metal surface, possesses all the advantages of the potter's clay electrode of Dr. Apostoli, with none of its disagreeable features. The author has been able to use a current of 150 milliampére strength by means of the above electrode without producing the slightest discomfort. The internal electrodes include a uterine sound of platinum with the intra-vaginal portion insulated, a sharp probe of platinum and iridium with insulating sheath, and a number of needles insulated with hard rubber to within an inch of the point.

The electrolytic action of the current was dwelt upon at length and given its due prominence.

The cataphoric action of the galvanic current was described, and to its action the author ascribed considerable prominence as aiding absorption of the fibroid growths.

Galvano-caustique is the name given to the local effect of the two poles when used intra-uterine in the form of metal probes. This effect is considered a point of great importance by Doctor Apostoli, and from which he expects to see a great advance developed in the treatment of the hæmorrhagic fibroid tumors of the uterus. The effect referred to is only obtained from a current of 100 milliampére strength concentrated by means of an electrode of unattackable metal. The local effect of the two poles upon the lining of the uterus are distinctly different. The effect of the positive pole is to coagulate and harden the tumor that it comes in contact with without changing the vitality of the tissue. The effect of the negative pole is to cause a liquefaction of the tissues in which it comes in contact, with considerable destruction of tissue.

The coagulating effect of the positive pole is utilized in transforming the hæmorrhagic surface of the endometrium into a dry, coagulated surface that will not allow of a hœmorrhagic exudate.

Three operations or methods of application of these powerful doses were described in detail.

1. Intra-uterine *galvano-caustic.*
2. Negative cervical galvano-puncture.
3. Galvano-puncture or needle-operation: (a) extra-peritoneal; (b) intra-peritoneal.

The first operation (intra-uterine galvano-caustic) is employed for two effects: 1st, to check excessive hæmorrhage by the local effect of the positive pole upon the endometrium; 2d, for the reduction in size of the tumor by the electrolytic action of the powerful current as it passes through the tissue of the tumor.

The second operation (negative cervical galvano-puncture) is performed for the purpose of establishing an artificial channel into the substance of the growth, to take the place of the cervical canal that has been distorted or obstructed to such an extent that it cannot be entered for the ordinary intra-uterine treatment. The effect sought here is the reduction of the tumor.

The third operation described by the author of the paper was the galvano-puncture, or needle-operation proper. This is for the treatment of large sub-peritoneal fibroids that can only be reached by means of needles, and the electrolytic action only of the current is expected.

The author offered the following summary of conclusions:

1. A means of generating a continuous current of electricity which can be increased from 10 to 250 milliampere strength is necessary in order to obtain all the effects of the electrolytic treatment of fibroid tumors of the uterus.
2. The most distressing hæmorrhages from fibroid tumors can be healed by the local coagulating effect of the positive pole if applied intra-uterine.
3. The intra-uterine electrode, when positive, should be of unattackable metal and should conform, as nearly as possible, to the size and shape of the uterine canal, and have the intra-vaginal portion insulated.
4. When the cervical canal cannot be entered, a negative galvano-puncture should be made into the presenting part of the obstructing mass of the tumor, and an artificial channel created which is to take the place of the impenetrable uterine canal in all subsequent treatments.
5. The intra-uterine electrode should in all cases be negative, unless there is hæmorrhagia or excessive leucorrhœa, when the positive pole is required.
6. The strength of the current should be the strongest possible consistent with the desired therapeutic effect, and the toleration of the patient.
7. Cases of intolerance of high doses arrange themselves under the three following heads: 1, acute hysteria; 2, acute enteritis; 3, acute metritis, peri- or pari-metritis. The most tolerant are the deep uteri and profusely hæmorrhagic.
8. The ordinary duration of the séance should be about eight minutes.
9. The number of operations are necessarily dependent upon and influenced by the result to be accomplished. A severe hæmorrhagia can be checked in from four to five treatments, while a general reduction of the tumor necessitates many, varied, of course, according to the size and location of tumor. In many cases simply a restoration to health and a relief from the prominent and annoying symptoms must be accepted as the substitute for an actual cure.
10. The time of commencing treatment matters little if the tumor is not rapidly growing and no excessive hæmorrhage is present. The operation should be intra-menstrual, if possible, but if hæmorrhage is continuous, operate during flow.
11. Extra-uterine puncture should be regarded only as a last resort; but every means of reaching the tumor through the uterus being impractica-

ble, seek, if possible, to make the operation extra-peritoneal; should this, in turn, prove equally undesirable, use as a final alternative the abdominal puncture.

12. Strict antiseptic precautions should be carried out in this treatment, as in all others.

DR. H. T. BYFORD said he wished to express his admiration of the mastery which Doctor Martin has acquired over this method of treatment. It will undoubtedly take an important place among the surgical remedies for uterine fibroids. But the usefulness of any remedy must be determined not only by its effect, but also by its safety and convenience of employment. For instance, the radical treatment or removal of the tumor, is a frightfully severe measure, and is reserved for cases that cannot be cured in any other way, while removal of the appendages is attended with considerable risk of life, and is reserved for those cases which cannot be helped by less dangerous means. So also this electrolysis, which is difficult of application and capable of harm, must be reserved for cases which cannot be cured by remedies more convenient and less hazardous. But before this, the safest of surgical procedures, can become the usual treatment for such cases, it must prove more efficacious than the still safer medicinal treatment. Fibroid tumors with hæmorrhage are the ones also most benefited by ergot and tampons in the majority of cases, and after the hæmorrhage is thus relieved there is no hurry in resorting to surgery. As to the effect of this treatment on the tumor itself, the evidence is not all in. The success of Apostoli, whose persistence is very praiseworthy, has been somewhat limited with regard to the removal of the tumor. The success of the so-called electrolysis upon fibroids seems to be no better, if as good as that of ergot, and it is doubtful if it is produced in a very much different way. That electrolysis can break up the chemical constituents of a living tumor for any considerable distance from the electrode, without destroying the life and absorbing properties of the tissue in the course of the current, is a theorem that requires more than mere mathematical demonstration. We all believe, however, that it can stimulate the uterus to a contraction and partial strangulation of the tumor, and also stimulate the absorbents to remove it, and are prepared to have it proven to us that it will do so in many cases in which ergot fails. But it happens that the cases in which ergot is of the least use are those in which electrolysis is of most difficult application—the subperitoneal. And yet he has, as a rule, relieved the symptoms of the subperitoneal variety (excepting those immense neglected ones too large for anything but removal) by ergot, which, even when it cannot cause compression of the tumor, can diminish its blood supply. He hopes and believes, however, that the methods of Apostoli will enable us to manage safely cases that must otherwise require a dangerons operation.

PROFESSOR WILLIAM T. BELFIELD said: Doctor Martin has conferred a favor upon us in bringing Apostoli's method before us. During the last twenty-five years various attempts have been made to reduce fibroids of the uterus by the galvanic current; yet none of them have been recognized as successful, because, doubtless, as Doctor Martin very properly says, the current has been used in an ignorant, inaccurate and bungling way. Apostoli's method is unique in the strength of the current used, as well as in the accuracy of its application to the uterus; whether this method will produce satisfactory results remains, as it seems, to be seen, for Apostoli himself has been guilty of the gross inaccuracy which necessarily impairs the confidence claimed by his statements. Through Doctor Martin's kindness he had an opportunity to read Apostoli's book in which are set forth his methods and the results of treatment on ninety-eight patients. The book bears the impress of perfect candor and truth,

and yet, in looking through the ninety-eight cases which he records as fibroids of the uterus, most of which were benefited, it is evident that nearly all were not fibroids, but were cases of subinvolution. Many of them were women under 30 years of age belonging to the poorer classes, and who were unable to secure proper rest and care after confinement. The clinical history as well as the physical examination recorded by Apostoli shows that they were plain cases of subinvolution. That the electric current has a value in such cases is unquestionable and has often been demonstrated, but it is not accurate nor justifiable to apply the results obtained in treating subinvolution to the treatment of fibroids, for the distinction between subinvolution and myoma is as sharp anatomilically and etiologically as it is clinically. It seemed to him that only four of Apostoli's cases were evidently and certainly uterine fibroids; it is possible that six others might be so reckoned, but certainly eighty-eight of the cases were, so far as can be judged from the record, cases of mere subinvolution. Yet the results secured in these four cases were most positive and decisive. In two of them the tumors were of enormous size. These two patients had been seen by Pean, whose opinion was sought as to the advisability of operation. In one case he declined to operate, on the ground that the patient could not survive an operation; in the other he was ready to operate, but the patient declined. Yet both of these cases of undoubted and extensive myomata were rapidly and greatly improved and the tumors reduced under Apostoli's treatment. But four cases are not enough to justify a generalization, and we may hope that Doctor Martin will soon favor the Society with the results of the method in his own hands, for we may be sure that he will avoid the sole error which can be charged against Apostoli.

PROFESSOR P. S. HAYES said he had not given this matter a trial in fibroid tumors, but had in the use of electricity generally. There are two factors in the treatment of fibroids by electrolysis—the chemical and physical and the physiological. How the physiological action of electricity operates is a question, but the chemical and physical produce their effect by the splitting up of compound molecules and the chemical and physical liberation of gases at the polls. Certainly this factor (the chemical and physical) can be measured by the amount of chemical work done, which depends upon the strength of the battery, etc. He said it seemed to him that a current even of 50 milliamperes is rather strong to use in the beginning. He had had quite an extensive experience, and could call to mind six or eight cases in which even the slightest galvanic current would produce dizziness so that the patient would have to lie down for half an hour. In one case in which only a half a dozen of cells were used, the patient left his office staggering like a drunken woman, and finally had to go in some place and rest. Afterwards he was unable to treat her except by allowing the current to traverse a very minute portion of her body. An induction apparatus the helix of which consists of thick wires and in which the current is generated by a battery of very large surface, gives a current which resembles somewhat the interrupted galvanic current; it stands midway between the ordinary induced current and the interrupted galvanic current of eight or ten cells. This current, applied over a tumor sufficiently strong to produce vigorous contractions, will reduce the size of a fibroid when ergot has failed to do so, and apparently in the same way, by inducing forcible uterine contractions and contractions of the abdominal muscles, tending to astringe it and squeeze out the life-blood which enters into it. It seemed to him, from his experience, that the injection of a few minims of 95 per centum carbolic acid into the tumor would produce a very similar local result to that produced by either the positive or negative pole. In the *Medical Record*, of recent date, he had seen an abstract of the last paper of Apostoli in which it states that, while he has reduced fibroid tumors in size, relieved the dis-

tressing symptoms and made the patient very much better, yet he does not claim that he has ever absolutely removed a fibroid so that it could not be detected. This method of treatment seems to offer a good deal of hope in many cases where other means have failed, and he would not hesitate to try it himself and recommend others to do so.

PROFESSOR H. MARTIN, in closing the discussion, said he could not agree with Doctor Byford that this method of treating fibroid tumors should be reserved as a last resort. In careful hands it is entirely free from danger, pain, and (except in the last variety of operation described this evening) all disagreeable features, and it should not, therefore, be postponed until less efficient and more objectionable means have been employed, such as the hypodermic injection of ergot, its administration internally in large quantities, tamponing the vagina, cauterization of the uterine mucous membrane, and innumerable other less efficient means of relief. In his experience with the strong current he had never yet seen an untoward result, and he had employed currents varying in strength from 25 to 250 milliampéres. Apostoli's method should especially be adopted early for the checking of hæmorrhage from the uterine cavity. He could not agree entirely with Doctor Belfield's conclusion in regard to Doctor Apostoli's results as reported in 1884.[1]

[1] That Doctor Belfield is in error in regard to this point will be made very apparent by the following summary of the cases reported by Doctor Apostoli and referred to by Doctor Belfield: 94 cases were reported; 15 of the cases had never borne children. Of the remaining 79 cases, where subinvolution of the uterus was possible, we find 4 pedunculated subperitoneal tumors in which error of diagnosis was not probable. Of the remaining 75 cases, 9 measured from 10 to 21 cm., and the accompanying descriptions of the cases can leave no doubt in an unprejudiced mind in regard to their being large fibroid growths. The full description in detail of the remaining 66 will convince anyone who will take pains to peruse them, that at least 44 are well defined fibroids. This leaves but 22 cases of the 94 reported in which there are not distinctive characteristics described, which definitely distinguishes them from simple subinvolution of the uterus.

His own results had been such as to make him very sanguine in regard to the value of strong currents for the relief of these difficulties, but as the object of the paper is the discussion of the method, and not the results, their consideration would be postponed until another time. He had never seen troublesome dizziness occur in the use of these currents in treatment about the abdomen.

BOOK REVIEWS.

EIGHTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF ILLINOIS, WITH AN APPENDIX. *pp. cxx, and 556.*

This is one of the most important reports of its kind ever issued in this country, and is itself sufficient evidence that the total expenditures of the Board for the year, viz: $12,831.26, were well invested.

Under the heading, "Medical Education," the Board reports very satisfactory progress.

There is not only a decided improvement in the standard and methods of education among the medical colleges of the United States, but there is also a gradual diminution in the number of students in attendance. The number of medical students attending the sessions of 1881–2, was 13,088, those of 1884–5 was 12,002, a loss of eight per centum. The number of medical graduates in 1881–2 was 4,500, and in 1884–5, 3,831, nearly sixteen per centum less. The Board attributes this condition of medical affairs to three causes, viz:

First, "hard times" and an increase in the number of students in attendance upon the Canadian schools. Second, a general and increasing desire on the part of the profession to elevate the standard of attainments necessary to enter its ranks. Third, the enforcement of certain requirements in states which have enacted laws regulating the practice of medicine. In this connection, the following facts taken from the reports of the per-centage of graduates to matriculates, at the colleges of the United States and Canada, is interesting: In Canada, the lowest is 6, the highest is 23. In the United

States the lowest is 12, the highest is 58.8, and nine of the colleges have a per-centage above 40. Among the states, Indiana, with a total of six colleges, has an average per-centage of 41.33, which is decidedly the worst showing. A comparison of the requirements for admission and graduation, shows the per-centage of graduates to matriculates highest in those colleges where the standard is lowest.

The contents of the appendix embraces: A, Report on Disinfection and Disinfectants; B, Coast Defenses Against Asiatic Cholera; C, Report of Proceedings, Sanitary Council of the Mississipi Valley; D, Meteorological Tables; E, State Sanitary Survey and House-to-house Inspection; F, Vital Statistics of Illinois, and Coroner's Inquest; G, Medical Education in the United States and Canada, 1765–1886. Of these *A* is the report of the Committee on Disinfectants appointed at the twelfth annual meeting of the American Public Health Association. It is very complete and of great practical value, but cannot be summarized in this notice. *G* contains an enumeration of all of the medical schools which exist or have existed in the countries mentioned, together with a statement, made out by the authorities of the institution reported, of the requirements for admission and graduation, and of their teaching force and facitities for instruction.

The titles of the other articles in the appendix explain themselves. A limited number of copies of this, and also of the seventh annual report, are still in possesion of the Board and may be obtained by physicians who apply for them through their senators or representatives. E. W.

ITEMS.

The publication of the *Neurological Review* has been indefinitely suspended in consequence of the impaired health of its editor Professor J. S. Jewell.

The *American Journal of Biology*, edited by Dr. H. D. Valin, has recently been started in this city.

Another new medical periodical, called *The Medical Standard*, has recently made its appearance in this city. The name of the editor is not given, nor does it announce how frequently it will appear. Its publishers are J. P. Engelhard & Co. It is very neatly issued, on good paper, and with exceptional typographical accuracy.

A new dental journal, called *The Dental Review*, has been added to the list of recent publications in this city. Its editor is not announced. It is published by W. T. Keener.

Dr. N. S. Davis, on the 20th of January, completed the semi-centennial of his entry into the medical profession, and on that occasion he was the recipient of quite an ovation from the students of the Chicago Medical College, who assembled in the college, and, in the presence of many mutual friends, presented to their respected teacher and their firm friend, as a token of their appreciation of the man and his manifold works, a beautiful set of library furniture, with an inscription commemorating the occasion. An appropriate address of presentation was made, to which Professor Davis replied in terms which showed that he appreciated both the motive and the gift, and pointed the way to others who are preparing to enter the profession to do good to the world; to make their fellow-men better and happier, and to earn the rewards of a well-spent life, such as he himself must now be enjoying.